







### THE PRESS ON CHEMISTS.

THE *Globe* of January 21 returned to the attack on dispensers' charges, taking for its text on this second occasion the articles which had appeared in the *CHEMIST AND DRUGGIST* and *Pharmaceutical Journal*. According to the *Globe* writer we are said to have met "criticism with virulent abuse, and with the general assertions that, right or wrong, a chemist and druggist—being above the ordinary rules of trade morality—may do whatever he likes, and call it fair." Most certainly we never wrote anything which could bear such a construction, and we should scarcely imagine such perfect nonsense has appeared in our contemporary. Until it can be shown that such a defence has been made by one of us we shall hold that the *Globe* has deliberately misrepresented our arguments, and we shall hardly be inclined to enter into further controversy with such a disingenuous adversary.

### A NECESSARY EXPLANATION.

IN our report last month of the case against a Cambridge chemist for selling Battle's Vermin Killer without registration, an impression was conveyed that Mr. Arthur Deck, who analyzed the article, was benefited by Mr. Gillett's misfortune to the extent of two guineas. It has come to our knowledge since that Mr. Deck handsomely declined to accept the two guineas fee when he found it would come from the pocket of a brother chemist, and refunded that since to Mr. Gillett. More than this, Mr. Deck also collected from other chemists of the town the remaining 15s. 6d., so that Mr. Gillett was not the loser of any money at all.

### HOW TO WORK IT.

THE occasion of an election for a member for Liverpool was wisely taken advantage of by the tradesman of that town, who waited on both candidates (the Liberal and the Conservative), and laid before each of them a statement of the case of traders against civil servants. We are informed that the result was quite satisfactory in both cases, each gentlemen perceiving the justice of our case. We can but regret that, according to legal arrangements, it was impossible to return both. The example of the Liverpool tradesmen in this matter is well worthy of imitation. We believe Mr. John Shaw, chemist, was the prime mover of this proceeding.

### THE DEARTH OF SCIENCE.

DR. FRANKLAND might well take up his parable against England, and bitterly complain of the sad lack of original investigation which characterized our chemists, if he had any prophetic idea of an article on "Saint," which was destined to appear in one of our representative journals of that science. A correspondent whom Argus might envy, has sent us an exposure of one of the most audacious tricks of scientific journalism which has ever come before us. Our readers will be either shocked or amused if they will turn to his letter. For ourselves, we have no doubt that the accomplished editor of the *Chemical News* has been shamefully hoaxed, and no doubt he will thank our correspondent and ourselves for our watchful care over his journal.

### THE SCHOOL OF PHARMACY.

WE hope we shall not be accused of rashness in admitting into our columns, an article rather severely criticising the course of instruction provided at Bloomsbury-square; we do so in no unfriendly spirit. No one need suppose that we endorse all the remarks which the contribution contains; but before printing it, we have assured ourselves of this one thing at least, that it is not the expression of a merely solitary opinion. And we would add one thing more, that it is not the composition of an unsuccessful and disappointed student. That school has done so much for the cause of British pharmacy, and in thirty years has turned out a set of men who have brought our country at least abreast with other nations in pharmaceutical science, that we would not lightly cast the shadow of a slur upon it. But it may be at least possible, that the new circumstances in which the Pharmacy Act has placed it, have somewhat overstrained its powers; and assuredly the combative tone which its trumpeters have adopted of late, has not been quite of a character to encourage gentleness and forbearance among "outsiders." Be it perfect or otherwise, however, true friends of pharmacy will not regret any fair discussion of its system of instruction; for only by that means can it hope to maintain the character which it should ever possess of being like Cæsar's wife, not merely above reproach, but even beyond suspicion.

### THE PHARMACEUTICAL CONFERENCE.

WE have been semi-officially informed that we were in error last month in announcing that the meeting of the British Association at Bradford was to be a fortnight earlier than at first announced. Our information on this point was derived from *Nature*. The meeting of the British Association is fixed to commence on Wednesday evening, September 17th, and the Pharmaceutical Conference will therefore, according to custom, commence on Tuesday, the 16th, the General Committee meeting on Monday evening, the 15th. The members of the trade in Bradford are hoping to see as many of their friends from a distance as possible, and are endeavouring to make such arrangements as will conduce to the enjoyment and success of their visit.

### CORRECTIONS.

WE wish to correct two errors which occurred in our last impression. One occurred in an article on "The Methyl and Ethyl Series of Anæsthetics," by Dr. Geo. Archbold, in which was described a "light ethylic ether," the formula of which as given indicated it to be isomeric with ordinary ethylic ether, but of a much lower specific gravity. The author afterwards wrote to us to say that he had since obtained the same product at 650 sp. gr. This extraordinary assertion caused us to make further examination, and, aided by the ablest authority on the subject in London, we have arrived at the conclusion that Dr. Archbold is certainly in error. He produces what we have no doubt is an excellent anæsthetic and we believe there is some novelty and merit in his process; but it is not ethylic ether nor an isomeride thereof. We have little doubt that it is the hydride of amyl more or less mixed with some of the heavier hydrocarbons.



The other mistake was merely a printer's error, which occurred in Mr. Walenn's article on Unitation. On page 10, col. 1, the question occurs, "What is 40° F. in Centigrade degrees?" and the answer given is—40° C. The minus sign before 40° F. was omitted in the question, or it would have shown that—40° F. and—40° C. are the same.

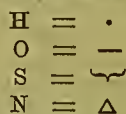
### GRAPHIC FORMULÆ.

A FEW years ago several eminent members of the Chemical Society were almost simultaneously attacked with an intense desire to represent the atomic formulæ of compound



bodies in a graphic manner. There was a lively difference of opinion as to whether this picturesque system of representation would increase or reduce the difficulty of comprehension, and of course the question was argued in the most serious manner. Among those who took the conservative view was the late Mr. J. C. Brough,

who sent a shaft of exquisite humour and keenness into the opposite camp. Several systems had been suggested by Drs. Guthrie, Frankland, and Crum-Brown, the first being probably the simplest and best. On half a sheet of note paper Mr. Brough sketched some representative formulæ, according to the several systems in an ultra-graphic manner. The one presented here is a fac-simile of one of his sketches, and is a graphic representation of the hydric ammonic sulphate ( $\text{NH}_4\text{HSO}_4$ ) following Dr. Guthrie's system, in which the required symbols were—



This gentle burlesque was scarcely encouraging to the graphists.

### PHARMACIENNES ABROAD.

It is not in England alone that ladies are looking towards the profession of Pharmacy as one in which they are likely to shine. At Amsterdam there is a society in existence which has already fitted five girls for its practice, and has seven others in training. At Kœstin, in Pomerania, a class of ladies study pharmacy. And more important still there are several societies in Germany which are prosecuting energetic endeavours to open the business for women. They will present a petition to the Federal Council, and we believe it is expected that there will be no opposition on the part of the chemists, who, especially in the smaller towns, are singularly inconvenienced by a famine of assistants.

### FRENCH LAW.

THREE grocers of Rodez (France), were condemned on December 27, the first to a penalty of 1,000 francs and expenses for the sale of *Vin de Quinquina* and *Sirop de Gomme*, the other two to penalties of 500 francs each and costs for somewhat analogous offences. This judgment, says the *Repertoire de Pharmacie* is so much the more fortunate for pharmacy inasmuch as it leads us to hope that the prosecution which the *Société de Prevoyance des Pharmaciens de la Seine* has commenced against some wine merchants of Paris will be successful.

### GEORGE WAUGH.

BORN FEBRUARY 11, 1801; DIED JANUARY 12, 1873.

SO link by link is broken that which binds us with the past. Thirty years ago a few good pharmacists met at the Crown and Anchor, in the Strand, to hold their first annual meeting. Most of them have since passed away, but we keep their memories in affectionate respect, and desire to record the gratitude it is our duty and delight to pay to the founders of our Society. On that occasion, William Allen was in the chair, and amongst the elected council were Charles Dinneford, Joseph Gifford, William Hudson, William Ince, Charles James Payne, John Savory, and George Waugh, the subject of our present notice. Surely one must not be forgotten who for twenty-two nearly consecutive years aided the deliberations of the Board. He was the youngest of six sons of the Rev. Dr. Waugh, a celebrated minister of the Scots' Secession Church, in Wells-street. From his father he inherited that stalwart frame so conspicuous at our annual gatherings, and a constitutional sympathy with interest in the welfare of the younger men of our Society. His early childhood was passed in the then rural neighbourhood of Penge Common, where he imbibed his first love of a country life. Not many years back, a genial old gentleman was a regular attendant at Professor Bentley's botanical demonstrations in the Regent's Park. This was George Waugh, who retained his delight in flowers, and was not reluctant to remain a student. He was educated at Mill Hill Grammar School, and in 1816 was articled to Mr. Dufresne, a general practitioner, near Brunswick-square. Under the influence of this medical training he entered the University of Edinburgh, where he continued two years. Leaving Scotland, he had the singular good fortune to enter the establishment of the late Mr. Hudson, of the Haymarket. Many houses now can boast of excellent arrangement, and offer facilities for acquiring practical information. It was not so at the date of which we speak, and amongst "historic" pharmacies, that of Hudson's was honourably distinguished. There was a friendly competition between William B. Hudson and Charles Gomond Cooke, of Southampton-street; if we remember rightly, one was to confine himself to bleaching liquid, and the other to sarsaparilla: both possessed a laboratory, then a fact worthy of mention; and it was well for the subject of this brief sketch to have found himself in an establishment of this character. Little remains to add; for, in 1823, he, with his elder brother, entered into business in Regent-street, where for fifty years he cultivated successfully the practice of his art.

It is seldom our lot to chronicle such uniform and quiet prosperity—the world was kind to him throughout; and he repaid this kindness with a warmth and geniality of manner rare to witness.

But we liked him at the Council; his hair was iron-grey, and he had seen the Society from its birth, yet he was not only tolerant of young men, but he thoroughly enjoyed their companionship, and more particularly their monthly fights. At the time of which we speak there was no lack of animation at the board, and it was admirably constituted; old men were there to give their counsel, and the younger generation were not slow in initiating schemes. George Waugh looked on as some calm lion, but not for long; for it is a mistake to fancy that he was a silent member—he was nothing of the sort. Soon the eye would flash, and the right arm would wave in an ominous manner, and his action was that of a man who meant to sweep all before him. This was but mannerism, however; for a more generous-hearted



councillor never breathed, and "when the fight was over," his troubles were speedily forgotten. One council day we met him standing disconsolate in the corridor; there had not been so much peace which he admired, but a duck-pond of argument which he disliked—two enthusiastic controversialists were absent; their united ages would not have amounted to his own, but he thoroughly liked them both. "If I had known," said he, "those two could not have come, I would have stopped at home, it is so very dull."

Nor must we omit to mention that he was the originator of the Bell Memorial Scholarships. Some one suggested that there should be a recognition of the services of Jacob Bell. George Waugh said none would be worth having but a form of acknowledgment that would be inseparably connected with the actual name.

He died on Sunday, January the 12th, at his residence, Queensborough-terrace, Kensington Gardens, and was buried at Kensal Green Cemetery on Friday the 17th. Mr. Haselden, the president of the Society, Professors Redwood, Bentley, and Attfield, and his old friends Messrs. Deane, Hills, and Sandford being among those who followed him to his last resting-place.



### UNITED STATES.

#### THE NEW U.S. PHARMACOPOEIA.

THE revision of this work was completed some months since, but the exigencies of press work and stereotyping have delayed its issue till a few days ago. I shall briefly note the principal changes which have been made, although it will not have the interest for the majority of your readers that it has for those of our land. Here, there is no national authority which compels the adoption of this work, although our apothecaries at once adopt it, and follow its formula.

The various medical and pharmaceutical colleges and societies are privileged to send delegates to the Convention for revision of the Pharmacopœia, which for several decades has met in the city of Washington, on the first Wednesday in May of each tenth year. Sixty delegates were appointed to attend this Convention, to whom the reports from the various bodies which had taken action toward revising the work were presented. After transacting the necessary business, a final committee of revision was appointed, consisting of Dr. Joseph Carson, Dr. G. B. Wood, Dr. Robert Bridges, Alfred B. Taylor, and John M. Maisch, of Philadelphia, Dr. W. Manlius Smith, of New York, G. F. H. Markoe, of Boston, Albert E. Ebert, of Chicago, Ill., J. Faris Moore, of Baltimore, Md., Dr. John C. Riley, of Washington, D.C., Dr. T. E. Jenkins, of Louisville, Ky., Dr. Charles A. Lee, of Buffalo, N.Y., Dr. J. S. Welford, of Richmond, Va., C. T. Wenzell, of San Francisco, Cal., and Dr. W. S. W. Ruschenberger, of the U.S. Navy.

The majority of this committee met in Philadelphia but once, and the bulk of the work was done by the members resident in Philadelphia. It was agreed that as the central committee progressed with the work it should be transmitted to each member of the committee for their vote; but we are informed that they were not consulted, and that the work was virtually done by the central committee alone.

As this central committee had four medical men, and but two pharmacists, it can be readily surmised that the latter must frequently have been outvoted by the medical men, and there are, at times, to be seen in the new edition

evidence that long use of certain defective formula is persisted in in preference to more improved processes. At the same time the work is a great advance on its predecessor, and the working committee are entitled to great praise and but very little scolding.

One of the great improvements is the change in nomenclature. The views advocated so ably by Prof. Attfield have been adopted, and the change is a step toward correct chemical and pharmaceutical terms.

The following are the additions to the *Materia Medica* primary list:—

Carbolic Acid.	Hypophosphite of Iron
Impure Carbolic Acid.	Bark of Cotton Root.
Oxalic Acid.	Iodoform.
Nitrate of Ammonium.	Origanum.
Hypophosphite of Calcium.	Calabar Bean.
American Hemp.	Hypophosphite of Potassium.
Indian Hemp.	Sulphite of Potassium.
Oxalate of Cerium.	Com. Bicarbonate of Sodium.
Chloral.	Hypophosphite of Sodium.
Cinchona.	Hyposulphite of Sodium.
Conium Seed.	Nitrate of Sodium.
Copper.	Commercial Oxide of Zinc.

Neat's-foot oil (*oleum bubulum*) has been dismissed. To the secondary list have been added:—

Asclepias Incar.	Flesh-coloured Asclepias.
Asclepias Syriaca.	Common Silkweed.
Castanea.	Chestnut.

Dismissed from the secondary list:—

Aletris.	Star Grass.
Angelica.	Angelica.
Arum.	Indian Turnip.
Gossypii Radix.	Cotton Root.

Transferred from the secondary to the primary list:—

Gelsemium.	Yellow Jasmine.
Hydrastis.	Hydrastis.
Ruta.	Rue.

And Valerianic Acid and Valerianate of Zinc have been transferred from the preparations to the primary list.

In a rapid review of that portion of the work devoted to preparations, we shall be able to make a few comments on those newly introduced, as far as these may be useful to European readers.

*Aqua Acidi Carbolic* is made from our *Glyceritum Acidi Carbolic*, ten fluid drams and sufficient water to make sixteen fluid ounces. *Charta Cantharidis* is a preparation almost like that of the B.P., but containing a smaller quantity of *Cantharides*. *Charta Sinapis*, is made by mixing Ground Black Mustard with solutions of *Gutta Percha*, and spreading it on paper.

*Extracta*.—The term *Alcoholic Extract* is retained to but three extracts, *Belladonna*, *Conii*, and *Hyoscyamia*, as of each of these narcotics there is also another extract prepared by bruising the fresh leaves, sprinkling them with water, expressing the juice and evaporating to the consistence of an extract. The newly added extracts are *Extractum Cannabis Americanæ*, and *Extractum Physostigmatis*, both of which are obtained by percolating the drug with alcohol, and evaporation till of a proper consistence. *Extractum Stramonii Seminum* also newly added, is made by percolating the seed with dilute alcohol and evaporating to the proper consistence.

*Extracta Fluida*.—In this class of preparations a most radical change has been adopted. The list has been increased from twenty-four to forty-five, the strength of all made uniform, sixteen fluid ounces representing sixteen troy ounces of the drug, the process of manipulation much modified, sugar has been replaced by Glycerine, which last has been indeed incorporated with most of the Fluid Extracts (except the resinous or oleo-resinous) either as a solvent or as a preservative. The process of percolation directed is one originally suggested by Samuel Campbell of Philadelphia, in which maceration is combined with percolation. In the original paper and experiments Mr. Campbell only obtained sixteen fluid ounces from the sixteen troy ounces of drug operated on, and claimed by his method to have practically exhausted them; but the experiments of J. T. King and others conclusively proved that the percolation should be carried farther. In the typical process adopted for almost all the fluid extracts the drug in a proper fineness of powder is moistened with the menstruum,



and packed in a suitable percolator. The surface of the powder is then to be covered with a disc of paper, and the remaining portion of sixteen fluid ounces of the menstruum is poured upon it. When the liquid begins to drop from the percolator, cork the lower orifice, cover the percolator tightly, to prevent evaporation, and set it aside for four days. Then remove the cork, pour on more of the menstruum, and continue the percolation until twenty-four fluid ounces have been obtained. Reserve the first fourteen ounces, mix with the reserved portion, and filter through paper if necessary.

The percolation in all but six of the fluid extracts is continued to twenty-four fluid ounces; for Senna and Spigelia to twenty-six fluid ounces; for Cinchona, Ipecac, Wild Cherry and Sarsaparilla to thirty-two fluid ounces. The menstruum is Alcohol for Buchu, Erigerontis Canadensis, Gelsemii, Serpentina, and Zingiberis. Stronger Alcohol for Cimicifuga, Cubeba, Lupulina, Mezerei, Sabina, Valeriana, and Veratri Viridis; and for all others (except Ipecacuanha and Pruni Virginiana), mixtures of Glycerine, Alcohol, and water. Glycerine is present to the extent of two ounces in each pint of the following finished fluid extracts:—Calumbæ, Hydrastis, Rhei, and Scilla, eight ounces in the pint for Ipecacuanha, Sarsaparilla, Sarsaparilla Composita, Senna, Spigelia, and Spigelia and Senna; in all others, four ounces in each pint.

Hydrochloric Acid is added to the extent of 180 grains to the reserved percolate for Extractum Conii Fructus Fluidum and of Acetic Acid, half an ounce is added to the reserved percolate for Extractum Ergotæ Fluidum; in both cases the acid being added before evaporation.

*Linimenta.*—Two new preparations are added to this class, Linimentum Aconiti, in which the active principles of eight ounces of the root are by percolation and subsequent evaporation obtained in seven ounces of an alcoholic liquid, to which an ounce of glycerine is added; and Linimentum Plumbi Subacetatis, a mixture of olive oil three troy ounces, and solution of subacetate of lead two troy ounces.

*Liquors.*—Five are newly added to this class of preparations, two of them being arsenical. Liquor Ferri Chloridi is the same preparation as has been heretofore official as the first portion of the process for Tinctura Ferri Chloridi. The new Pharmacopœia divides the process, making the solution official under the name just designated, while under the name of Tinctura Ferri Chloridi, we are directed to take the solution and mix it with three times its bulk of alcohol.

The formula for Liquor Zinci Chloridi is almost identical with the preliminary portion of the formula for Zinci Chloridi U. S. P., 1860, while the new Pharmacopœia directs under the appropriate head that the chloride of zinc shall be made from the solution.

Liquor Potassi Permanganatis might as well have been omitted.

*Ferrum.*—To the preparations of iron two have been added, Ferri et Strychnia Citras, in which one grain of strychnia is contained in one hundred of the salt, and Ferri Oxalas, made by precipitation between sulphate of iron and oxalic acid. This latter salt is much used in some of the Southern States, where it is a great favourite among physicians in cases where the tonic effects of iron are desired without the astringency which follows the exhibition of some other of the iron preparations.

In preparing the scale salts of iron, it is directed that the temperature should not exceed 140° F.

*Glyceritum.*—This new addition to the U. S. P. includes solutions of Carbolic Acid, Gallic Acid, Tannic Acid, and Borate of Sodium in glycerine, the proportions being, in each case, two troy ounces to half a pint of glycerine.

Glyceritum Picis Liquida takes up the soluble portion of one troy ounce of tar in a pint of a mixture of glycerine, alcohol, and water.

Hydrargyri Oxidi Flava, long used as a remedy in opthalmic troubles (in the form of an ointment), has been made official, and is prepared by precipitating a solution of corrosive chloride of mercury (four ounces in five pints of water), by pouring it into a solution of potassa (seventeen troy ounces), and washing the precipitate with distilled water till free from chloride of potassium.

Liquor Ammonii Acetatis has an additional formula appended, in which separate solutions of acetic acid and carbonate of ammonia are made of such a strength that by

mixing equal volumes, it can be freshly prepared at a moment's notice. We cannot too particularly call the attention of our readers to the necessity of employing both acetic acid and carbonate of ammonia that are free from empyreumatic flavour. There is scarcely a remedy more grateful to the fevered patient than this, when properly prepared, nor one more disagreeable when the alkali is in excess, or the ingredients retain the odour of pyroligneous material.

*Mistura.*—The only modification in any of the articles in this class is the substitution of glycerine for sugar in Mistura Cretæ.

*Oleoresina.*—The process for these preparations is very lightly modified, and Oleoresina Filicis is added to the list.

*Pilula.*—The following note precedes the formulæ for pills:—

The practice of sugar-coating pills is approved in reference to pills which are expected to be slow in their operation, but is of doubtful propriety in regard to those intended to act quickly, as the coating retards the solution of the pill matter in the liquids of the stomach.

No new formulæ have been added, and one only has been altered, Pilula Aloes et Myrrha, by the substitution of aromatic powder for saffron. A marked improvement, however, is the adoption of formula to make the number of pills ordered conform to the pill-machines generally in use by pharmacists.

*Pyroxylon.*—The formula is improved by the substitution of nitric and sulphuric acids for the process formerly employed.

*Sodium.*—Soda (caustic), attained by evaporating the official solution of soda, and Sodii Arsenias by a process now made official, are the additions to this class. The changes in manipulation are that Sodii Bicarbonas is now directed to be made by washing the commercial article till free from sulphates and chlorides.

*Spiritus.*—Spiritus Juniperi is the only addition. The greatest modification of formulæ is in the mode of preparing Spiritus Ætheris Nitrosi. The process adopted is that made known by Professor T. Redwood, and certainly is one much better adapted to the wants of the small manufacturer than the former process. There is also much economy of material, while the result is highly satisfactory. It would be well if more of the pharmacists would make this preparation for their own use. No article of medicine is so rare to find of reliable quality as this, and at present there is but a single manufacturer in this city, whose production is fully up to the standard of the U. S. P.

Spiritus Chloroformi is directed to be made with dilute alcohol in place of stronger alcohol as heretofore.

Spiritus Lavandulæ, formerly distilled from the flowers, is now a solution of the oil in stronger alcohol, and Spiritus Myristicæ is now made by the latter method.

*Succi.*—This class has but two representatives, Succus Conii and Succus Taraxaci. The juice obtained from fresh conium leaves is mixed with alcohol in the proportion of five measures of juice to one of alcohol, allowed to stand seven days, and then filtered. The juice obtained from fresh dandelion is treated in the same manner.

*Suppositoria.*—The Committee of Revision have taken a step toward liberality in admitting to the Pharmacopœia this popular class of remedies.

Oil of Theobroma is the only fatty body present, and the process recommended is simple and effectual. The uniformity of strength and size is the great desideratum accomplished by making official this class of remedial agents now so largely used.

*Tinctura.*—Tinctura Aurantii and Tinctura Benzoini admitted, and Tinctura Aconiti Folia dismissed, are the radical changes in the list of tinctures. The modifications which will bother pharmacists most are changes of ingredients in some of the most popular remedies. Tinctura Aloes et Myrrha has saffron omitted. How many will think their old-time friend "Elixir Pro" has changed his flavour and appearance, while those who have made the acquaintance of "Huxham's Tincture" (Tinctura Cinchonæ Composita), will think something is wrong with it, as both saffron and red saunders are omitted, and the proportions of Alcohol and water are changed. "Warner's Gout Cordial," Tinctura Rhei et Sennæ, is also deprived of the saffron and red saunders; Tinctura Sanguinaria has its alcoholic strength increased.



**Trochisci.**—The addition of four new kinds is all that needs to be noted.

**Unguenta.**—Unguentum Acidi Carboliei (one part to seven); Ung. Cantharidis (one part cantharides cerate to three parts resin cerate); Ung. Hydrargyri Iodide Rubri (sixteen grains in an ounce); Ung. Hydrargyri Oxidi Flavi (sixty grains in an ounce); Ung. Mezerei (fluid extract of mezereum four fluid ounces to sixteen of lard and yellow wax); Ung. Plumbi Iodidi (sixty grains in an ounce); are the additions to this class.

**Vina.**—The new Pharmacopœia directs fluid extract of ergot, and fluid extract of ipecacuanha to be used in place of the powdered drug as formerly used.

**Zincum.**—The process for Zinc Acetas is more direct than the one formerly employed, being a combination of oxide of zinc with acetic acid and crystallization.

## Provincial Reports.

### GLASGOW.

#### CHEMISTS' AND DRUGGISTS' ASSOCIATION.

The fourth general meeting of the Association was held in Anderson's University on the 5th of February, 1873, at 9 p.m. Mr. Thomas Davison, President, in the chair.

The minutes of the last meeting having been read and approved of, Mr. Alex. Kinninmont brought forward his motion to the effect "That the subscription fees be reduced, and certain rules of the Association be altered." But as it was pointed out that according to the constitution of the Association such a motion was out of order, it was laid aside, to be again taken up at the next annual business meeting.

Mr. J. J. Weir then moved, "That this Association instruct their council to take immediate steps for the formation of such an assistant branch of the Association as is advised by their sub-committee in minute of conference, of date 20th May, 1872. This was seconded by Mr. James M. Fairlie, and agreed to.

Mr. Fairlie then proposed, "That this Association instruct Mr. Weir to convene a meeting of the assistant members of the Association to form an assistants' branch, in accordance with his motion." This was seconded and agreed to.

Mr. Weir then delivered an interesting and somewhat amusing lecture on "Health."

At the close of the lecture, on the motion of Mr. Fairlie, seconded by Mr. Kinninmont, the lecturer was awarded a hearty vote of thanks.

### IRELAND.

#### CHEMISTS' AND DRUGGISTS' SOCIETY.

An association has been formed in Ireland under the title of the "Chemists' and Druggists' Society of Ireland." The president is Edward M. Hodgson, Esq., of the firm of M'Master, Hodyson and Co., Dublin, and the subjoined list comprises the rest of the officers.

*Vice-President*, William Allen, Esq.; *Secretary, pro tem.*, William Hayes, Esq.; *Treasurer*, John Goodwin, Esq.; *Committee*, P. Bermingham, Esq., W. L. Erson, Esq., G. H. Grindley, Esq., J. T. Holmes, Esq., Wm. Marshall, Esq., S. Oldham, Esq., J. A. Ray, Esq., R. Simpson, Esq., W. F. Wells, Esq.

The meetings are to be held on the first Monday of every month, at 8 o'clock p.m., and the objects of the Society are stated to be—1st, the regulation of prices in leading articles in the trade, as may be from time to time brought forward; also of the articles in other trades, by means of deputations from this Society.

2nd. To raise the standard of the trade by making it compulsory that apprentices should pass examinations, as may hereafter be arranged, before being admitted into the trade.

3rd. To promote a friendly intercourse among the members of the trade, and to regulate matters that may tend to their united interest.

4th. With a view to obtain a status, similar to that secured by Act of Parliament to the Pharmaceutical Society of England.

All chemists and druggists in Ireland are eligible to become members, on being elected by ballot, and paying an annual subscription of £1 ls. in advance, in pursuance of these rules. Assistants who have served an apprenticeship, and apprentices may be admitted on payment of 5s.

A meeting was held on Monday evening, the 3rd inst., at 12, Grafton-street, John Goodwin, Esq., in the chair, the principal business being the consideration of the best means of action to protect the trade from the effects of a "Civil Service Co-operative Society" recently established in Dublin. After a long discussion it was resolved that a discount of 5 per cent. be allowed to any one producing the card of membership of the society. It is expected that the respectable wholesale druggists of Ireland will refuse to open accounts or do business with the Society on any terms, and the retail trade will doubtless prefer doing business with the firms which keep that determination.

The next meeting of the Society is expected to be of importance, as a discussion will take place as to whether it would be most desirable to induce the Pharmaceutical Society to extend its operations to this country as in Scotland, or to make some terms with the Apothecaries' Hall.

### LEICESTER.

We have received the half-yearly report of the Leicester Chemists' Assistants and Apprentices Association. During the six months forty-five educational classes have been held.

The average attendance of each class has been as follows:—Chemistry, 10; Dispensing, 11; Materia Medica, 13; Botany, 9-5.

Two prizes were offered for general proficiency in the subjects taught in the four classes. The first was gained by Mr. Lomas, the second by Mr. Shakespeare. The prizes offered for attendance were obtained by Messrs. Mann, J. N. Butler, and Lomas.

The preliminary class has been carried on through the kindness of Mr. Walker.

The committee take the opportunity of expressing their appreciation of that gentleman's honorary services. The fact that he has helped so many to pass the Examinations, is a sufficient proof of his great ability.

During the session one member has passed the Minor and three the Preliminary. The total number of members has been 29, viz.:—14 assistants and 15 apprentices.

The library continues to be a source of interest, the books being in constant requisition.

The embryo museum is still in confusion. The valuable specimens of Materia Medica being nearly useless through the want of a proper cabinet. To meet this want an application has been made to the Pharmaceutical Society for a grant, but up to the present time no definite answer has been received. [At the last meeting of the Council a grant of £10 was made.]

From the treasurer's statement of accounts we find that the total disbursements of this model society for the six months reached eleven guineas. The chemists of the town subscribe 10s. or more each, and are made honorary members, the assistants pay 6s. per annum, and apprentices 4s. The lecturers are in most cases the assistants themselves, who thus advance both themselves and others by setting themselves to master a special subject. The programme for the ensuing session now lies before us, and it comprises in all fifty lectures on chemistry, botany, dispensing, Materia Medica, and allied subjects. The example of this association might be imitated with much benefit in other provincial towns.

#### MIDLAND COUNTIES CHEMISTS' ASSOCIATION.

The annual *soirée* of the Midland Counties Chemists' Association took place on the 23rd ult., at the Royal Hotel (Lovegrove's) Assembly-rooms, Birmingham, when



there was an excellent attendance. The floor of the hall was occupied by tables displaying several objects of chemical and pharmaceutical interest. At nine o'clock the attention of the audience was engrossed by a short series of brilliant experiments by Mr. C. J. Woodward, B.Sc., of the Midland Institute, on "Flame," which was highly appreciated by the assembled guests; Mr. Alfred Bird, of Worcester-street, enlivened the early part of the evening by performances on his harmonized glass bowls; Mr. Lancaster, of Bull-street, contributed a valuable display of graphoscopes, stereoscopes, photographs, etc.; Messrs. Southall, Son, and Dymond showed a number of new pharmaceutical preparations and rare drugs, of great interest and value; Messrs. P. Harris and Co. occupied a table with chemical apparatus, and exhibited a beautiful variety of Geissler's vacuum tubes; Mr. H. W. Jones, leaves prepared by a new chemical process, showing artificial autumn-tinted foliage; Mr. O. Sargent, the mono-chromatic light, exhibiting the striking effects of yellow flame on different colours; Mr. W. Southall, a fine herbarium pharmaceutical; Miss R. Bailey, of Bennett's Hill, microscopes, stereoscopes, and some valuable transparencies; Messrs. J. Wright and Co. exhibited a series of models of Wallace's patent gas burners, a small laboratory boiler heated with gas, a very simple and neat tinman's stove, a patent temperature regulator of extreme delicacy, and a new portable Turkish bath. Besides these and other exhibits, several gentlemen—Mr. Geo. Dymond, Mr. W. R. Brasington, Mr. A. Southall, etc.—contributed some valuable microscopes with objects. At ten o'clock the floor was cleared for dancing, Messrs. Synger and Gilmer's band being brought into requisition. Dancing was kept up with unflagging interest until after two o'clock in the morning, when the company dispersed. The *soirée* will certainly rank as one of the most successful and satisfactory in connection with the sciences of chemistry and pharmacy.

#### CO-OPERATION IN LIVERPOOL.

THE Civil Service and Public Supply Association, Limited, of Liverpool, held its first meeting last week. The Chairman (Mr. E. C. Batt) explained that the meeting had been called under the provisions of the Act of Parliament, but as the company had been in existence only a short time it was impossible to prepare any balance-sheet or report, and it was therefore proposed that the meeting should be adjourned until February, 1874. After some discussion, many of the members believing that six months' interval was long enough, this course was adopted. The Chairman altogether denied that any of the articles had been sold under cost price, and stated that a fair profit was put upon all the goods sold. At the conclusion of the business an extraordinary meeting was held for the purpose of altering one of the articles of association, so as to enable the company to borrow a greater amount than one-half of the nominal capital. It was stated that this was necessary to enable the Company to purchase Compton-house, where their stores were, for which a most advantageous offer had been made. This was agreed to, and a meeting will be called at a later date to decide upon the amount to be borrowed. After this meeting, we learn the Directors all resigned, but a new Board was constituted next day. We are also informed, on what we believe to be reliable authority, that the Association is at present doing a business of over £4,000 a week. There is, however, in Liverpool a strong feeling against the enterprise.

The *Industrial Monthly* says that "a mysterious fire, which twice in one day came near burning up a house in Guilford, Conn., was finally traced to some tin pans, from which the rays of the sun had refracted with sufficient intensity to start a blaze at a focus some distance off."

The Liverpool Corporation have decided to take the opinion of the Court of Queen's Bench on the local stipendiary's decision in the recent summons against Mr. Kelly, the butlerman, and it is to be hoped that the superior Court will give us a practical elucidation of the working of the Adulteration Act.

#### THE BROUGH FUND.

FOR the maintenance and education of the five children who have been left unprovided for by the untimely death, at the age of thirty-eight, of John Cargill Brough, for ten years editor of the CHEMIST AND DRUGGIST, and the first appointed editor of the "Year Book of Pharmacy."

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The subscription list will be closed on the 1st of March next.

Subscriptions will be received by Mr. Bremridge, 17, Bloomsbury-square, London, W.C.; or may be forwarded to the Hon. Sec., at 81, Mornington-road, London, N.W.

The following is the subscription list of the "Savage Club" for the same purpose:—

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We have not received the detailed statement of the London Institution Fund, but we are informed by the hon. treasurer, Sir John Lubbock, F.R.S., that it has reached the sum of 1,180*l*. 15*s*.

ATTEMPTS are now being made to utilize the vast stores of sulphur which have long been known to exist at Krisuvik, in Iceland. The solfataras of this district have lately been described, before the Society of Arts, by Mr. C. W. Vincent.



## PROPOSED ADDITIONS TO THE BRITISH PHARMACOPŒIA.

AT the evening meeting of the Pharmaceutical Society this month Professor Redwood referred to proposed alterations and additions to be made in the British Pharmacopœia. The work had now been published about six years, and it had, during that time, been reprinted, and would require to be reprinted again very shortly. In introducing a reprint of it on the next occasion, it was proposed to add a supplement or appendix which should contain certain new remedies which had been established in medical practice since the work was published. The question arose as to whether, on this occasion, a new edition should be brought out, or an alteration or addition made simply in the existing one. It had been considered that there were serious difficulties and objections that would attach to issuing a new edition at the present time. The difficulty of inducing the medical profession generally to take up a new pharmacopœia was very great, and there were many other difficulties that would stand in the way. It was generally considered and recognised that ten years was about the time that a pharmacopœia should be allowed to remain in circulation before it was materially and generally altered; and therefore it was proposed merely to issue now a supplement or appendix with the reprint. This would be attached at the end of the reprint, and would be issued separately besides; so that those who had the work already, could possess themselves of it in addition to the original work. The next question was, as to what this appendix should contain? There were several medicines and preparations that he had himself suggested, and other persons (members of the Pharmacopœia Committee of the Medical Council) had suggested others. It was desirable to induce pharmacists and others in this country, and in Scotland and Ireland, to make suggestions of what they thought should be introduced into the appendix of the Pharmacopœia at the present time. Now there were certain things that were quite obvious, as, for instance, hydrate of chloral and nitrate of amyl. Acetic æther he proposed more especially with a view to its use subsequently, when the Pharmacopœia was more generally altered. Then there were chloroform water (*aqua chloroformi*) and mustard paper (*charta sinapis*). There was a preparation of elaterium, which it was suggested to introduce in the form of a diluted powder (*pulvis elaterii compositus*), which would consist of elaterium with nine times or seven times (he should say nine times) its weight of sugar of milk. In that diluted form its administration would be facilitated and rendered more safe. Tincture of orange peel was a question which had been before them, and it was suggested that, leaving the present tincture in the Pharmacopœia, they, nevertheless, might add a tincture of the fresh peel; but that, however, was a question to be considered, and in reference to which they were anxious to receive the opinions of practical pharmacists. Then it was proposed to introduce a syrup of liquorice (*syrupus glycyrrhizæ*). Some of the medical members of the committee had suggested that that would be a convenient preparation to order frequently in prescriptions. Then they had such things as the hypophosphites, hypophosphite of lime and hypophosphite of soda, and the sulphites, as, for instance, sulphite of soda, although he should himself consider that the hyposulphite, which was now in the Pharmacopœia among the tests, would answer every purpose, and be quite as effective as the sulphite. Then there was oxide of bismuth, and there were two preparations which were suggested and brought under the notice of the Society some time ago, by Dr. Dyce Duckworth, assisted by Mr. Carteighe—namely, the acetum and the oxymel ipecacuanhæ. And then it had been suggested that it would be very desirable to have a pill mass in the Pharmacopœia of a purgative nature, and not containing aloes. There was none such at present, and therefore they had proposed *pilula jalapæ composita*, which should be free from aloes, and should owe its purgative quality to some other ingredient. Then there was nitrate of ammonia, which they thought of introducing because it was now used in the preparation of mercurous oxide. Next there was precipitated oxide of mercury, which, for certain purposes, was found to be more active and efficacious than the red precipitate obtained by the application of heat. Then there was

pepsine, some form of which it would be proposed to introduce into the supplement. It had been suggested, moreover, that they might probably introduce a new form of suppositories. Some medical men took exception to the present suppositories on account of their greasy basis, and it had been proposed that either gelatine, softened with glycerine, or starch and glycerine, might be used in certain cases as a more suitable because a more cleanly basis. The greasiness occasioned by the use of the present suppositories was a source of discomfort and annoyance. These were some of the propositions which had hitherto been made, and the Pharmacopœia Committee were anxious to obtain as extensively as possible the opinions of pharmacists with reference to these and other additions which it might be thought desirable to make to the Pharmacopœia. The Medical Council expected to meet in the early part of April, and the Pharmacopœia Committee proposed to have the draft of an appendix prepared and submitted to the Council next month. He should have to draw up that appendix and submit it to the Committee by the 1st of March, so that it might be circulated before the Council itself met. Of course, it would be quite open to make any further alterations afterwards, but, in some form or other, the appendix would have to be before the members of the Medical Council soon after the first of next month. That would happen before the next meeting, but, probably, throughout the whole of this year the subject could be discussed, for he was not quite clear that the reprint would take place until the commencement of next year.

## BEHIND THE SCENES; OR STUDENT LIFE AT BLOOMSBURY-SQUARE.

(BY ONE WHO HAS BEEN THERE.)

PERHAPS one of the most unthankful offices which can fall to the lot of mortal man to perform is that of stripping off the trappings and tinsel from some object of general admiration, in order to reveal the rubbish and decay which lie hidden beneath. And surely it is a sign of a healthy activity, in this age, which Mr. Carlyle declares to be one of "lies and shoddies and shams," that on all sides we hear of "adulteration," "substitution," and "admixture"; while magistrates talk learnedly of stearin and palmatin, and police inspectors hob-a-nob with analytical chemists: It is, at least, evidence that an earnest search after reality and truth is being prosecuted in certain quarters. It has often occurred to me, after hearing the eulogistic and almost reverential tone which some gentlemen adopt when referring to our school of pharmacy, whether they, or their hearers either, have, after all, any definite idea of in what this wonderful school consists. I fancy a good many provincial members regard 17, Bloomsbury-square, as a sort of Bushby's patent pill machine: you have only to put in your mass of raw students, turn the educational handle, and lo, at the end of ten months they emerge superfine, scientific pharmacists. Now if any one who takes the trouble to read these lines has any such idea, let me beg him to abandon it now, once for all.

The student who goes to Bloomsbury-square must depend entirely upon his own personal exertion. If he enters untrained for private reading, dull, and without any incentive to cut his way through from the dry, red-tape chemistry of the Pharmacopœia to the commencement of an intelligent study of science, then let me assure him he will leave, in precisely the same condition. And if, on the contrary, he lays, during his sojourn there, the foundation of a thorough and comprehensive knowledge of chemistry, then, though I regret in one way to say it, he must take to himself almost the entire credit, a very small amount being due to the institution. If any one should imagine these statements to be overdrawn, I simply ask him to examine for himself the facilities which are afforded the student of Bloomsbury-square of acquiring a knowledge of pharmacy. Let him recollect that it is not intended to be a museum, where an odd half-an-hour may be more or less pleasantly spent in viewing the bottles of specimens securely locked up in glass cases, nor a lending library where one exchanges a book, or lounges for a chat; but it considers itself, *par excellence*, a



school of pharmacy, possessing a session of ten months, and charging college fees. It purports to be the only orthodox centre of education for the whole rising generation of pharmacists, those who get their education elsewhere being snubbed as "crammed"; it is the only source from which a student can (according to such ideas) with propriety, obtain a thorough acquaintance with the several subjects comprised in both the Major and Minor examinations. On what grounds then, does it lay claim to such exclusive privileges? What facilities does it afford to the pharmaceutical student, which are peculiar to itself?

First, there are the lectures—three hours a week being devoted to chemistry and pharmacy, and two hours to botany.

The chemistry lectures are delivered by a professor of world-wide fame, won by honest service in the cause of pharmaceutical chemistry. Let no one think I would utter a word of disrespect towards Dr. Redwood; but with regard to his lectures, I consider it only fair criticism to say that for whatever purpose they may be adapted, they are eminently unsuited to pharmaceutical students.

The lecture theatre ought, at least, to keep pace with the examination room, and *there*, no student who valued a guinea, would venture to call sulphuric acid "oil of vitriol," or calcium chloride "muriate of lime."

Let those who have the direction of such matters remember that when everything else is in progress, the Pharmaceutical Society can hardly afford to stand still. Science loses nothing by being presented in a fresh and vivacious style; a "popular" lecturer not only charms his audience by the success of his experiments and the brilliancy of his style, but succeeds in impressing upon their minds an amount of scientific truth altogether beyond the reach of his drier rival.

Most gladly do I turn to botany, for it would be impossible to speak in too high terms of Professor Bentley's admirable lectures. They are the one redeeming feature of the institution; they are lectures of which any college in England might be proud, and there is no student who has had the privilege of attending them, but will recall with pleasure the ever-vigorous and delightful instruction of the genial professor of botany. So much for the lectures; now for the laboratory. From the glowing description of it in the official calendar, one might almost be pardoned for acquiring the idea that it is a sort of scientific paradise for the chemical student, replete with every convenience and appliance for original investigation; and that a learned director, and energetic demonstrators, did their utmost, by personal attendance, to help the student out of the perplexing difficulties which must of necessity beset his early career. If I possessed any such sanguine anticipations when I paid my fees, and became a laboratory student, I was very speedily disenchanted.

I have not a word to say personally against either of the gentlemen who take part in the educational management. The director is undoubtedly particularly adapted for his post; but he certainly cannot be accused of letting his light shine too brightly before the students. My own ideas as to the duties devolving upon the director of so large and important a laboratory may be mistaken—possibly they are. It may only be intended that the chief professor should take the place of a Webster's Dictionary upon a library shelf—to be referred to in cases of emergency; but for my own part, I cannot see how any man with apparently the work of two secretaries, besides a considerable amount of private analysis, can have much time left to devote to the interest of the fifty or more students under his care. I can only condole with the Pharmaceutical Society upon the loss of Dr. Tilden, a teacher whom every student loved and respected in that he made their interests his own, unsparing of his efforts in the desire to benefit those who in some measure depended on him. And here I may express a hope that his successor will find room to display in his new capacity the energy of action and warmth of interest which were certainly dormant when I had the honour to be his pupil. I am heartily glad to find from a conversation I have had with two or three of the present students, that the new assistant demonstrator bids fair to become extremely popular. They spoke of him as taking that lively personal interest in their work which only students know how to appreciate.

I think the majority of students who enter the laboratory and who have worked at practical chemistry on their own account before, feel somewhat disappointed and chagrined at having to commence with making such things as solution of potash, or acetate of ammonia. Let me therefore say a word to those who are anxiously looking forward to a session at Bloomsbury. Begin for yourselves, at home. Get the last edition of Attfield (for there is no other book so well suited to the chemistry of the Pharmacopœia), and having thoroughly mastered the few pages on chemical philosophy, commence experimental work with potassium, and go through all the synthetical reactions right away to the end of the acidulous radicals. Then try your hand at analysis; begin with a simple solution, and stick to it till you have thoroughly understood every reaction; then go on to another one more difficult. And if a line of my own experience will encourage you, you may know that in a country village, with no other help than "Attfield" and Fowne's Manual, I worked on to the analysis of powders and solutions, containing all the ordinary metals and acids, with very fair success. And here let me urge you to avail yourselves of a source which I found an invaluable help, viz., the "Corner for Students," in this journal. Never mind if you fail a dozen times in making a perfectly correct analysis, the prize is not worth one-twelfth part the experience you are gaining at every failure. Then, after you have worked steadily on yourself, you may expect to derive some good from a few months in the laboratory. For it seems to me an utter waste of time and money for a student to spend half a session at Bloomsbury-square, for the sake of making a few specimen tubes of Pharmacopœia chemicals.

If the Pharmaceutical Council would condescend to take a hint from an outside source, I would venture to suggest the desirability of their providing a glass case in the Museum for the reception of the scales, which, I find from recent information, still adorn the laboratory balance-room. They would be interesting objects, not only from their antiquity of design, but as presenting as fine a specimen of the spontaneous oxidation of iron as one would wish to meet with. And here I cannot refrain from expressing a word of admiration for the abundant facilities which the laboratory affords for quantitative analysis. There are generally about thirty or forty students at work; of these, about one-half are preparing for the "Major," and consequently much employed with volumetric analysis. For all this number there are just *two* balances provided. And as a student unaccustomed to balance-work generally takes about half-an-hour for each operation, it is pretty evident that the others have ample opportunity for exercising their patience. Besides this, however, the balances are constantly resorted to by Dr. Attfield's private analysts for work altogether unconnected with the Society; thus allowing the students to exhibit still greater forbearance. The position of the balance-room itself deserves a passing notice. It is situated just at the foot of a flight of stairs leading to the store-room; and upon these the students are wont (at any rate, they were when I was one of them) to practice a little gymnastic exercise. But the abrupt descent of a body, some dozen or more stone in weight, upon the floor, close to a student endeavouring to take his weighing to within half a milligramme, is hardly likely to lend accuracy to his result.

In years gone by when the present director was fresh to his work, and the demonstrators devoted their energies to the good of the students, there used to meet on Saturday mornings a class of laboratory students with their able instructors as president and vice-president, for the purpose of reviewing the work done in the earlier portion of the week; and of affording the younger members an opportunity of introducing a topic for general discussion, or of reading papers upon subjects which they had specially investigated, and in which they had made original researches. I need not say how thoroughly these classes were appreciated. And the record of their meetings which is to be found in the library, bears witness to the excellence of the manner in which they were conducted, and the admirable results which they produced. But alas! *Ichabod* is the only legend which reminds the student of the days that were—and present administrators are all too busy to have aught to do with any scheme tending to exceed the strict letter of the bond.



So much for the laboratory; and with it ends all that Bloomsbury-square can do for the pharmaceutical student. The library remains, but for purposes of study it is altogether useless; and I would strongly advise any student who has time not occupied in the laboratory, never to attempt to do any hard reading there. I tried it myself again and again, but never, I am sorry to say, without feeling, as I went away, thoroughly ashamed of the little work I had done. What with the unceasing movement in and out, the interruption of fellow-students, and the buzz of conversation arising from others who have dropped in for a chat, serious reading is a mere farce. Why, even in a Mechanic's Institute, where the intellectual effort of the readers does not get beyond the *Saturday Review*, a general silence is observed in the reading-room, an adjoining one being provided for conversational purposes. Why could not a similar arrangement be adopted at Bloomsbury-square? Let a room be set apart for the free use of the students where they can talk to their heart's content; but surely in a *soi disant* school of pharmacy, full opportunity should be given to the student to acquire for himself the knowledge which is otherwise denied him. I need not refer to the inconveniences attending the examination days, so well attacked by Mr. Ince in his paper last month. With the large number of candidates now presenting themselves for examination, I can readily imagine that the crush is even worse than he describes.

When will the leaders of the Society begin to comprehend the changes which they have themselves brought about; accept their new responsibilities; and either do the work of education thoroughly, or leave it alone altogether?

#### CIVIL SERVICE CO-OPERATION.

A DEPUTATION from the National Chamber of Trade, including Mr. W. H. Smith, M.P., Sir T. Chambers, Q.C., M.P., and several well-known London tradesmen, waited on the Chancellor of the Exchequer on January 29th, at Downing-street, with reference to this subject.

Mr. W. H. SMITH introduced the deputation, and said the grievance they complained of was caused by the Civil Service Stores. They wished to cast no imputation against the principle of co-operation, but they maintained that the co-operation now carried on by the Civil Service Stores was unfair, improper, and injurious to the public interests. These Civil Service Stores were neither more nor less than gigantic shops; there was no real distinction between the gentlemen directors of these stores and gentlemen conducting business as grocers or wine merchants in Regent-street or Oxford-street. These directors were responsible to their associates for the way the business was conducted—they bought and sold, they engaged and discharged servants; and devoted an amount of time and attention to trading pursuits which must seriously interfere with their duties as public servants. There was an impression among members of the Chamber of Trade—whether well or ill founded—that gentlemen in the Civil service violated a rule of the Treasury by engaging in trade; and these gentlemen, moreover, were supposed to give their whole time to the public service.

Mr. F. MORRISON, secretary, referred to resolutions in accordance with the views expressed by Mr. Smith, which were passed at a public meeting at which Sir T. Chambers presided; considered the Civil servants were inadequately employed; and hoped the Government would assist retail traders by passing some remedial measures.

Mr. A. B. DANIEL (Chairman of the Committee of the National Chamber of Trade) said they complained of Civil servants organizing a large system of trade not confined to themselves; they had gone out of their way to benefit persons with whom they had no connection. They had thereby much injured retailers in London and the country. Many persons were under the impression that they had the Government sanction; they put the Crown on the paper they used, and also over their doors. The Government hours of the clerks were from ten to four, and if they gave their minds thoroughly to their employment during that time it was impossible to give their minds to the management of concerns turning over millions of money. As a commissioner of the income-tax,

he knew many instances in which the income of grocers and other traders had declined year after year on account of these stores and the great patronage afforded them.

Mr. LOWE: What patronage?

Mr. DANIEL: What is considered by many the patronage of the Crown. They are presumed to occupy an important position; they are gentlemen whose *status* in life gives them a certain *prestige*. He also complained that the managers of these Civil Service Stores had affiliated a number of houses, after making the circuit of London, to sell for them such goods as were not conveniently admitted into their own stores. If any of these clerks tendered for a Government contract, would that be congenial to the Government mind? But if they might trade in one way, why not in another?

Mr. R. ATTENBOROUGH referred to a Treasury minute made when many companies were being floated, to the effect that Civil servants should not be allowed to accept directorships or other situations demanding their time during office hours.

Mr. LOWE: That was seven years before the Limited Liability Act passed.

Mr. ATTENBOROUGH could not believe that the Legislature ever contemplated that heads of offices would enter into retail trade; and he thought their being connected with trading companies was derogatory to their position. Besides, they must at times neglect the public service for their private business. What they came to complain of was really not co-operation, but joint-stock trading. Every one should pay the income-tax.

Mr. LOWE: The income-tax is not leviable under 100*l.*, and so a great many would escape. The Government gets more by charging on the profits of the whole concern. A man getting 99*l.* a year would not pay anything, while the whole company would pay a good deal.

Mr. ATTENBOROUGH: We think these gentlemen should not have any special privileges, and that the Government is entitled to their full time.

Mr. LOWE: To each man's full time, for which the public has bargained. That is my construction of the minute.

Mr. ATTENBOROUGH said, if the minute referred to was insufficient, they thought a small measure might be introduced into the House of Commons by which the crying evil complained of might be remedied.

Mr. J. JONES, in the course of a long speech, said if the Civil servants had their whole time occupied they could hardly attend to these things; for years of their lives they wanted something to do. There was a great feeling of discontent because an "economical Government" allowed six hours to be a day's work in their offices, while in the rest of the country it was eight or ten hours. The whole Civil Service system wanted re-examination. It was an old remnant of the patronage system before the new system of competition was introduced. The Civil servants were paid too much, and did too little. Mr. Jones proceeded to read some lengthy statistics of salaries paid in Berlin, by which it seemed a first-class clerk got about 200*l.* a year, and second-class officials from 100*l.* to 120*l.* And how many hours did the Prussian clerks work? They worked in Berlin from eight o'clock till four.

Mr. RIVERS WILSON, private secretary to Mr. Lowe, here went up to the right hon. gentleman, and said something in a low tone of voice. On this the speaker stopped, but was requested by Mr. Lowe to continue.

Mr. J. JONES: You can't listen to two at once.

Mr. LOWE: I desire that no such observations be made.

Mr. JONES apologised, and said that the Prussian clerks worked in the provinces from eight to twelve in the morning, and from three to seven in the evening. He was proceeding to read the number of groshen paid for indicting folios, when

Mr. LOWE intimated that there was not much time left for small details.

Mr. JONES therefore concluded with the hope that the Government would consider this a great national question, with a view to the re-examination and re-adjustment of the Civil Service.

Mr. LOWE: This subject may be looked at from two points—first as to the matter of discipline in the Civil Service, next as it affects the interests of retail dealers. My business is principally with the first. When you waited upon me before, I made a statement of my views, which have not been seriously called in question, and from which I have seen no



reason to depart. It has been prohibited by a minute that gentlemen should engage in business which would occupy their time during the Civil Service hours. I said then I had no objection to Civil servants combining to obtain from wholesale dealers what they wanted themselves; and further, that in my individual opinion, I should wish that the Civil servants did not go beyond that, and disapproved of their becoming salaried managers. But I told you then I did not possess the power to prevent them. Not only don't I possess the power, but I rather think it would be scarcely fair to the Civil servants if I tried to possess it. We make a bargain with the Civil servants not like an ordinary contract, but a contract for life, under certain rules which are binding both on them and the Government. We have made our conditions, one of which is that we should take from them no portion of the time which is not devoted to the public work. Otherwise it might have been said we had been unfair in making a man engage himself irrevocably, and then insert a provision reducing it to an ordinary contract. I am not prepared to advise my colleagues to take the steps you suggest. I really have nothing more to say on the point, and see no advantage in entering further into the subject. But let me offer you in all friendliness one word of advice. You say you don't come here to object to co-operation; in almost every word you have shown that you feel it very severely. This is not simply a question as to the discipline of the Civil Service, as I will point out. Suppose you were to succeed, and that I brought in a bill, and carried it through all difficulties—no easy matter, for you must bear in mind that the House of Commons consists of consumers, and it would not be a consumers' bill—how much further would you be? It is not the Civil Service you have to contend with, but the principles of co-operation, and allowing people a greater advantage for paying ready money. As long as other people can manage these businesses as well—such as officers on half-pay and many others—your difficulty would remain. It is not the attraction of the Civil Service, but the cheapness of the goods supplied. (Loud cries of "No, no.")

Mr. ATTENBOROUGH said that other co-operative societies had not succeeded. The success here was attributable to the supposed special patronage.

Mr. LOWE: Anybody can stick a crown over his door. There are plenty of respectable people not in the Civil Service. You remind me of the story of Sir Isaac Newton making two holes—one for the cat, the other for the kitten to go through. I understand the difference in the price of certain articles at these stores is about 30 per cent. (No, no.) How can you put that down by a warfare of this kind? You are only wasting your energies. Your only way to meet them is by competing with them in the market. If your capital is not large enough, combine till it is. If you are not prepared to do that, make up your minds that you must be driven from your position. If people want credit, they must go to tradesmen who can give it. But if they can get with money in their hand much more in one place than another, there they will go for it. You must cease taking a narrow view of the case, and adapt yourselves to the present state of things. People have discovered how goods can be obtained cheaper, and as long as they can be so supplied, by turning their capital over oftener than you do, what you complain of will go on. Your crusade against the principle is hopeless; you must cheapen the market. If we proposed a bill on the subject to Parliament it would not be listened to.

### THE NATIONAL CHAMBER OF TRADE.

THE second annual meeting of the Chamber of Trade took place in Exeter-hall on Wednesday evening, January 29. The attendance of members was not so large as could have been wished. Mr. W. H. Smith, M.P., was in the chair.

The report, which was read by Mr. Morrison, the Secretary, detailed the proceedings of the Chamber during the past year. In reference to the subject of the Civil Service co-operation, it stated the action which had been taken by the Chamber. A *verbatim* report of the meeting over which Sir Thomas Chambers presided had been printed and sent to every member of Parliament, and had also been cir-

culated amongst the public generally. After a *résumé* of the general proceedings of the Chamber during the year which had just terminated, the report stated that deputations had been appointed in Chelsea and Hackney for the purpose of obtaining from the Parliamentary members an expression of their views on the question of Civil Service co-operative supply, and preparations were now making for taking similar steps in the Tower Hamlets, Lambeth, and Southwark. Communications had taken place with those interested in the provinces, and satisfactory information had been received in reference to the formation of branches in some of the most important towns in the kingdom. Information of the successful operations of the Chamber in different parts of the country was daily arriving.

Allusion was next made to the interview which had been held that day with the Chancellor of the Exchequer. The proceedings of the Chamber with regard to the opposition to the income-tax was detailed, and it was announced that the meeting at the Guildhall which had been arranged by the Chamber having resulted in the formation of an Anti-Income-tax League, the further prosecution of that opposition would be left to them. The committee also desired to express their appreciation of the labours of their Secretary, Mr. F. Morrison, and their organizing Secretary, Mr. Brooks. The number of members was stated to be upwards of 1,600, and the financial position of the Chamber was satisfactory.

Mr. W. H. Smith, M.P., addressed the meeting. He expressed his very strong dislike to the system of Civil Service trading. He believed that the expression of that opinion was nothing more than the reflex of the sentiments of the tradesmen of London on the subject. He thought he might confidently state that there was no wish or desire on the part of the trading interests to take any hostile steps against fair competition and co-operation, but the subject upon which the deputation that afternoon had an interview with the Chancellor of the Exchequer was that of unfair competition. He held that those who filled offices as Civil servants under the Crown should devote the whole of their time to the duties of their position. It was a universally admitted maxim that no man could serve two masters. The principle held good as applied to merchants' and tradesmen's servants, and every other office of trust, and must therefore apply with equal force to the Civil servants of the Government, which rendered it impossible that those who held office under the Crown could undertake the management of co-operative stores without neglecting their public duties. From present appearances, however, his impression was that the objectionable existence of Civil Service co-operative stores would last until it broke down by its own weight; and he did not think that time would be long deferred, because he believed that the cost of conducting these stores would ultimately be found to be too heavy, and much more in proportion than the expenses incidental to the carrying on of a large private trade. He regarded the existence of these Civil Service co-operative stores as peculiarly oppressive and unjust to small private tradesmen, who had to contribute towards the salaries which the Civil servants themselves received. As to the interview which they had had that afternoon with the Chancellor of the Exchequer, he would simply say that the Chancellor told the deputation exactly what he (the chairman) thought he would tell them. The Chancellor informed them that personally he did not consider it desirable for the Civil servants of the Crown to be engaged in private business transactions, but stated at the same time that he did not think it advisable to introduce any measure into Parliament for the purpose of prohibiting them from doing so. It was therefore clear that they could not hope for any steps being taken by the Government to prevent public officers from becoming tradesmen, and competing upon most unfair terms with those who paid them their salaries.

Mr. Smith then proceeded to speak of other matters with which such a Chamber could properly occupy itself, and instanced especially the Bankruptcy Law as a subject which might profitably engage their attention. Every one knew how easy it was for a person with a respectable address to obtain goods on credit, and having obtained them to pay a shilling in the pound for them, or what he pleased. Mr. Smith was sometimes almost inclined to doubt whether a debtor should ever be free until he had paid 20s. in the pound. The incidence of house taxation on the trading classes was another subject which was worth the attention of the Chamber of



Trade. As to the income-tax he (the speaker) was scarcely prepared to guarantee to vote for its abandonment. He was, however, clearly of opinion that the many and great abuses incident to its collection ought to be very closely seen into.

After some formal resolutions had been moved and passed, Captain Warner Dennis, R.N., made a vigorous and amusing speech. He had come to that meeting especially to testify his hearty sympathy with tradesmen in their attack on the Civil Service co-operative stores. He had nothing to say against co-operation. He believed he had a perfect right to buy a cask of wine or a chest of tea and share it with one or more friends if he chose to do so. That was co-operation. But if he retailed his chest of tea out to all comers he was in every sense a tradesman, and ought to be put on precisely the same footing. As for this Civil Service trading, it seemed to him utterly bad, utterly indefensible, and though from the first he had been invited to join them, he was proud to say that he had never spent a brass farthing with them, and, please God, he never would. He recommended tradesmen to have a thought for their own interests when electing representatives for Parliament, and he hoped some member would move for a full inquiry into the Civil Service generally; or if it was not competent for a private member to move for such an inquiry, he might at least move that it was desirable such an inquiry should be moved for.

Mr. T. O. Wethered, M.P., also addressed the meeting, and Messrs. Attenborough, Betts, and other members of the Committee urged the members to do their best to increase the strength of the Chamber.

A vote of thanks to the chairman was passed enthusiastically, in responding to which Mr. Smith intimated that in consequence of too many other occupations he feared he might soon have to ask the Chamber to relieve him from the duties of the Presidency; but he added he should always be warmly interested in the success of the Chamber, for he owed everything he possessed to trade, and was determined to stand by the class that had made him.

## Homœopathy.

### THE CRUCIAL EXPERIMENT.

OUR comments last month on the remarkable anecdote narrated by the *Homœopathic World* about a certain Dr. Houatt, who took a dose of something in the fifteenth centesimal attenuation, and correctly judged the medicine by the symptoms, have drawn from our contemporary a reply which, to say the least, is not distinguished for conclusiveness. For example, we pointed out that Dr. Teste, who sent the problematical medicine, sent also a note which concluded "with the wish that you may succeed." This sentence we characterized as *fatally suspicious*. To this, says our censor, "we have but one remark to make: Dr. Teste was a scholar, a man of honour, and a gentleman; let no one cast a slur on his fair name." Assuredly we rejoice to hear of Dr. Teste's excellent character, and unless we have tremendous provocation we will never cast a slur on his fair name. But once more we venture to remark, that the concluding sentence of his letter was *fatally suspicious*. Then Dr. Houatt's reply described 390 symptoms which he experienced, and from which, singly or in the aggregate we are not informed, he inferred that that fifteenth centesimal attenuation contained belladonna. We were staggered at the idea of any man going through 390 different sensations as a consequence of a dose of medicine, for we thought the story was told us in all good faith. Our contemporary takes refuge in the rather shabby subterfuge that "distinct" symptoms were not mentioned, and calls on us to explain what is a distinct symptom. Surely it would be more reasonable to tell us first what is a symptom that is not a distinct one.

The fact is, the anecdote is all a piece of child's play, and it is not fair fighting on the part of the homœopaths to promulgate their theory among old ladies and the nobility by the aid of such flimsy nonsense. The advocates of high dilutions must needs rely on fancy arguments, and not on practical facts; but homœopaths whose faith is limited to the simple doctrine of *similia similibus curantur* would do well to separate them-

selves from their ultra-metaphysical brethren. The latter drag the whole school into absurd positions which tend to render homœopathy in all respects ridiculous. There is undoubtedly some truth in the dogma on which this system has been built up. But it is not all truth; and it is a pity that a certain set of gentlemen, whose primary duty is to preserve health and cure disease, should act as though that were secondary to the great object of maintaining their system intact.

## Dentistry.

### SUPPOSED DEATH FROM NITROUS OXIDE GAS.

WE have to record the death of a lady at Exeter under circumstances which strongly indicate that the administration of oxide gas was the occasion. An inquest was held on the body on January 23rd, and from the evidence then adduced we gather the following facts:—The lady, Miss Ida Wyndham, accompanied by her brother-in-law, Dr. Pattinson, went to Mr. Browne-Mason, a dentist, of Exeter, to have a large double upper tooth extracted. At her own request, and seeing no reason to doubt the judiciousness of the step, the gas was administered; but Dr. Pattinson, who had had no experience in the administration of the gas, noticing that the pulse got lower, suggested its discontinuance, and an attempt was made to extract the tooth without it, but the pain was so great that again, at the request of the patient, the gas was administered. This time the tooth was removed, but the dentist found it necessary to split it, and draw the fangs separately. Suddenly the face of the patient became livid; the features swelled; the tongue protruded, and other alarming signs were manifested. Mr. Browne-Mason at once ran for Dr. Drake, who came almost immediately, but five minutes afterwards the patient died. Dr. Drake had no doubt that she died in consequence of the administration of the gas, but he added that she had such a broad excellent chest, and the organs there seemed to be in such a healthy condition, that he did not think anyone would regard her as an unfit subject for the gas. The jury brought in a verdict consonant with this evidence, and fully exonerating the dentist.

This verdict was, no doubt, what might have been expected from the facts laid before the jury, but it is very seriously to be regretted that it was arrived at on quite insufficient evidence. Up to this time no fatal case has been clearly established against nitrous oxide gas. Its administration has been a boon to hundreds of thousands, and the whole medical world had come to regard it as almost absolutely safe. It is very unfortunate indeed, therefore, that a stigma should now be cast on its fair fame without the most irresistible evidence. Mr. A. T. Norton, in the *British Medical Journal*, has pointed out that the symptoms might have perfectly indicated an accumulation of blood in the larynx; and the editor of that journal has suggested several other causes which might have occasioned death. A *post-mortem* examination was the one means at hand to certainly ascertain the truth, and this was omitted. For this omission the coroner must be held responsible, and the whole medical world will regret it as extremely unfortunate. The occurrence was very sad, but it is not logical to assume that the administration was certainly the cause of death, or at any rate that it was the sole cause.

## Pharmacy.

### SYRUP OF TAR.

MONS. LATOUR gives the following formula in the *Repertoire de Pharmacie*:—

Tar, washed with boiling water ...	100 grammes.
White sugar ... ..	600 "
Powdered gum senegal ... ..	100 "
Water ... ..	400 "
Simple syrup ... ..	2,000 "

The tar must be triturated in a porcelain mortar with the sugar and the powdered senegal until a perfect mixture is obtained. Then the mixture should be turned into an



evaporating dish, previously made hot, and the water, with sufficient of the syrup, boiling, added. The mixture is to be continually triturated until a perfect emulsion is obtained, and the rest of the syrup, boiling, is to be added by degrees, having brought the syrup to the boiling-point, and strained while hot.

One part of tar is contained in thirty parts of the syrup. M. Latour adds that a teaspoonful mixed with a tumblerful of bitter water gives a proper draught of tar water, in which the tar flavour is well disguised.

#### LEAD IN SYRUP OF IODIDE OF IRON.

At the last evening meeting of the Pharmaceutical Society Dr. Attfield showed a sample of Syrup Ferri Iodid. sent by Mr. Rimmington, of Bradford, containing a number of golden crystals of iodide of lead. Mr. Rimmington had traced this lead to the iodine employed. Dr. Attfield said lead was often to be found in company with iron filings, but in this case iron wire had been used. Mr. Williams mentioned that he had himself found iodide of lead in his syrup, and had traced it to the iron. Mr. Umney had found the same impurity, but only when crude iodine had been employed. Resublimed iodine should always be used.

#### NEW METHOD OF ADMINISTERING MEDICINES.

At a recent meeting of the Société de Pharmacie of Paris M. Limousin described some little envelopes of medicinal powders, hermetically wrapped in wafer paper, which he had prepared, the advantages claimed for which were that the doses were in every case rigorously exact; and further, that in each instance the name of the medicine was printed on the envelope, so that error was almost entirely guarded against. M. Limousin especially recommended these *cachets* for sulphate of quinine, rhubarb, etc., but he also mentioned their use in a more useful respect. This was to present in one envelope two substances, separated by a middle leaf of wafer paper, the result intended being that these substances would combine in the stomach, and form a salt in the nascent state.

#### MOROCCO DRUGS.

At the recent evening meeting of the Pharmaceutical Society the *pièce de résistance* was a paper by Dr. Arthur Leared, on some drugs collected during a tour in Morocco. Dr. Leared well retained the interest of his hearers, in his description of the physical features and vegetable products of Morocco. But it is difficult to obtain any information of much pharmaceutical or commercial value from that semi-barbarous country.

The products of Morocco are very various; especially curious is it, as was remarked by Mr. Hanbury afterwards, that carraway seeds, always regarded as indigenous to cold climates, should be exported thence. The native medicine men jumbling together astrology and pharmacy, will by no means impart any information. The only chance of obtaining information is from the Jews, who, although degraded, oppressed, and ignorant, are nevertheless observant and communicative. Gonorrhœa is extraordinarily prevalent all over the country, and many medicines are in common use as sexual stimulants. Cosmetics and fat-producing medicines are also popular among the women. We shall publish some of Dr. Leared's notes at an early opportunity.

**THE SYNTHESIS OF ORGANIC COMPOUNDS.**—It is well-known that the attention of chemists of late years has been frequently directed to the preparation, from inorganic materials, of those compounds which were formerly regarded as exclusively the products of organic matter. M. Jungfleisch has now succeeded in preparing tartaric acid by complete synthesis, from artificial succinic acid obtained from bromide of ethylene. The artificial acid thus obtained is a mixture of inactive tartaric acid and racemic acid, which the author has split into acids acting on the plane of polarization to the right and left. This is really the most important part of M. Jungfleisch's results, as it invalidates M. Pasteur's statement that the so-called organic bodies, when produced artificially in the laboratory, could not exert any influence upon polarized light, unless they were derived from substances which possessed such an action; and shows that in this case at any rate the substance obtained possesses not only the composition, but also the physical properties of the natural product.



#### CERESINE, THE NEW SUBSTITUTE FOR BEES' WAX.

**T**HIS article is sold in round, thin plates, a few inches in diameter. It is faultlessly white, scentless, harder than wax, and translucent at the edges. The fracture resembles somewhat that of wax, but it cannot be kneaded, either in warm water nor between the fingers. It fuses at 171° Fahr. It is not attacked by acids, either hot or cold, and is not in the slightest degree saponified by caustic alkalies. It is volatile at high temperatures, and distils unchanged. It is closely analogous to paraffin and stearine, but is rendered more waxy in appearance by being cooled slowly. It is probably Gallician ozokerite, sometimes known as mineral wax.

#### NEW PHOTOGRAPHIC PRINTING.

M. MARION, of Paris, has devised a method of photographic printing which consists in impregnating paper with ferro-prussiate, by which it is rendered sensitive to light. The drawing, which is made on tracing paper, is laid on the sensitive paper as a negative, and exposed to light, after which the sensitive paper is washed in water, when the copy is found produced thereon in white linen on a blue ground. By the use of a tannin solution the ground can be changed from blue to black, the work remaining white.

#### GAS FROM WATER.

We recently described a process of manufacturing gas from air which is likely to be introduced by the "Air Gas Company." Another invention, probably of great value, is the process adopted by the "New Gas Company," and invented by Mr. Ruck. Instead of manufacturing gas by the distillation of coal, Mr. Ruck first obtains his hydrogen by the decomposition of water, and then charges it with the carbon necessary for illuminating purposes by passing it through a petroleum spirit of specific gravity 0.680. In the first part of the process, superheated steam is conveyed into retorts containing iron and coke raised to a high temperature. The steam is decomposed; the resulting oxygen combines with the iron and the carbon, and the hydrogen is given off, carrying with it a small proportion of carbon compounds. In this state it is valuable for heating purposes, but possesses very little illuminating power, rather resembling, when kindled, the flame of a Bunsen's burner. The various attempts which have been made to combine volatile hydrocarbons with coal gas, in order to increase its illuminating power, have all failed on account of the speedy precipitation of the former; but Mr. Ruck claims to have discovered that petroleum of the specific gravity stated will remain in combination with his hydrogen. According to the report of Messrs. Quick and Spice, the engineers concerned in the matter, this claim has been subjected to crucial tests, and has withstood them all. The gas has been suddenly reduced in temperature from 60° to 30°, has been kept for a month in a closed vessel, and has been passed through miles of iron pipes, with many rectangular bends, without any consequent precipitation. The petroleum can be added to the gas at any point between the manufactory and the burner, so that heating



gas alone might be supplied from the mains, say to the kitchens or the conservatories of a large establishment, and the illuminating agent only added to that portion of the supply which was to be used for lighting purposes. The mode of manufacture ensures the complete absence of the noxious sulphur and ammonia compounds with which we are familiar, but the gas, although in this sense "pure," is not dangerously inodorous. It has a distinct smell, pronounced by those interested in it to be agreeable, but which is certainly sufficient to lead to the discovery of any domestic leakage, and thus to obviate danger from explosions.

At the present price of coal, the discovery of a source of gas which is as plentiful as water has lately been should manifestly have an important bearing on the cost of production. The report of the engineers on this head is to the effect that they can command millions of gallons of the petroleum spirit required, and that the illuminating gas can be made at a cost of 1s. 7½d. per thousand cubic feet. They say also that out of every thirty men required for the manufacture of coal gas, twenty-nine may be dispensed with in working Mr. Ruck's process. These statements, if borne out by larger experience, cannot fail to attract the attention of the companies, and to lead to changes in their course of procedure.

#### GAS MANUFACTURE.

ANOTHER invention in the manufacture of gas is offered by the "Gae Generator Company." The process introduced in this case is the invention of Messrs. Porter and Lane, and consists essentially in an improved arrangement of the retorts, by which the distillation of coal is greatly facilitated. It has now been experimentally in use, upon a working scale, for some months, in the manufactory of the Chartered Gas Company in the Horseferry-road, and is about to be established on a much larger scale at their principal works at Beckton. Instead of the usual horizontal retorts, which are charged and emptied with great difficulty by severe and skilled labour, Messrs. Porter and Lane use vertical retorts, within which a screw, with an oblique blade, slowly revolves on a vertical axis. The coal is placed in a chamber or hopper above, and trickles down into the retort as room is made for it by the subsidence of that which is below. The apparatus is, therefore, self-feeding, and only requires that the hopper should be supplied at proper intervals by easy and unskilled labour, such as can be done by anyone who can handle a spade and a barrow. The revolution of the screw keeps a spiral line of coal in constant contact with the inner side of the retort; and the intervals between the turns of the blade allow room for the disengagement of the gas. By the time the coal reaches the bottom of the screw it is exhausted, and falls as coke into a vertical chamber below, which is continuous with the retort, but beneath the furnace, and in which it is instantly quenched. The coke chamber can be emptied by one man, as often as necessary, in one minute; and the whole process requires scarcely any interference from those in charge of it. By establishing a proper relation between the length of the screw, the speed of its rotation, and the heat of the furnace, the distillation of the coal can be carried exactly to the most desirable point, so as to obtain from it all the gas it can yield, and to stop short of the evolution of a variety of noxious products. In the horizontal retorts the outer crust of the mass of enclosed coal becomes over-burnt long before the inner portion is exhausted, and in this way many sulphur compounds are produced, even

although the charge, as a whole, is withdrawn flaming and manifestly unexhausted. In Porter and Lane's process, on the contrary, the charge falls out bit by bit in a merely glowing condition, and yields a coke which is said to be much better adapted for household purposes than that ordinarily made. It is lighter and more spongy in texture, and kindles readily when placed on a common fire; but it certainly burns out with great rapidity.

The results hitherto obtained by this method at the works of the Chartered Company seem to show a constantly increased production of gas to the extent of two thousand cubic feet for each ton of coal, and also an increased production of coke. Moreover, the division and distribution of coal by the screw exposes it so completely to the action of heat that the retorts may be kept at a lower temperature than in the ordinary method, and thus the life of each retort will be proportionately prolonged. The saving of labour, of course, speaks for itself; and the quality of the gas, especially with reference to the presence of sulphur compounds, is very superior to that made in the usual way. The retorts remain free from carbonaceous deposit; and their vertical arrangement has admitted of improvement in the furnace (included in Messrs Porter and Lane's patent), by which a considerable saving in repairs, fuel, and labour is effected.

#### GAS BURNERS, &c.

At the recent *soirée* of the Midland Counties Chemists' Association some very interesting scientific and mechanical appliances were exhibited by Messrs. John Wright and Co., of Birmingham. A part of their display was a series of models of Wallace's patent gas burners, which they claim have completely solved the problem of burning a mixture of air and gas with certainty and safety under all conditions of pressure or quality of gas. The appearance of a perfect flame of the "atmospheric" class is so remarkable as to be a thoroughly reliable index of complete combustion. The lower part of the flame contains a conical space whose surface is of a brilliant emerald green colour; this is surmounted by a clear amber flame. The temperature of this flame is such that coming from a half-inch burner tube at main pressure, it will readily melt brass, silver, gold, or copper. The experiment was made frequently during the evening with copper, which has the highest melting point, the drops of molten metal falling into a glass vessel of water. The temperature of the flame is estimated at about 3,000 degrees Fahrenheit. All the burners exhibited would burn equally well, whether turned high or low, without the possibility of lighting within; thus the offensive smell so often produced by the atmospheric burner is avoided, and all its other advantages secured. The size of the burners ranged from the common laboratory burner consuming three feet per hour, to the steam boiler furnace which would burn eighty feet per hour.

Besides the apparatus for burning gas, there was shown by the same firm regulators of novel construction, which secure at the same time the greatest convenience and economy. A patent temperature regulator was attached to the burner of a gas stove, whereby the temperature of the chamber or conservatory could be maintained at any desired heat within two degrees Fahrenheit. The expansion of air enclosed in a thin metallic vessel is made to act in a small column of mercury, and by this means to regulate the supply of gas to the stove, according to the temperature of the room it is in. This apparatus is so sensitive that,



placing the band upon the expansion vessel the heat was sufficient to extinguish the stove, and presently, as the metal cooled, it relighted again without attention. Thus a heating stove is produced which will supply heat exactly as it is wanted, and will work for weeks or months without failing and without attention. No scientific knowledge is required to manage it, the turning of a small screw being all that is necessary in order to set the apparatus at work at the required temperature. Hitherto no burner has been made to burn gas in large quantities without the aid of bellows or a chimney, and without depositing soot. Wallace's gas furnace is so constructed that the small pressure of the gas in the mains is made to induce sufficient air to effect complete combustion without further assistance. When used below a steam boiler a regulator is attached, which is actuated by the pressure in the boiler, so that when the steam approaches the blowing-off point the gas is turned low, and the damper closed in proportion, thus maintaining a uniform speed of draught in the flues, and securing the utmost economy in fuel. There is, moreover, a regularity in the production of steam which could never be obtained by any other means from a small boiler. Such a burner as this is not confined in its uses to steam boilers, but will be found of the greatest value in all delicate processes of manufacture where a uniform supply of heat is necessary to ensure a good result. A small laboratory boiler, heated by gas, showed the action of the regulator in controlling the gas by the boiler pressure, and supplied the steam for a most interesting experiment, in which a jet of steam was made to do the part of bellows to a gas blow-pipe. The steam jet forced the gas through a condenser, where the steam was reduced to water, and both passed into a receiver, where the water remained. The gas passed on to the burner, with its pressure greatly increased, and burned with this well-known appearance. The burner resembled that of Bunsen, but was provided with a cock carrying an eccentric, which lifted the air slide, and would vary the proportion of air and gas to produce the oxidizing, reducing, or light-giving flames, besides being free from "striking back," the great fault of the common Bunsen when turned low. This system of blow-pipe promises to be a great acquisition to many of the Birmingham trades, as one steam jet may supply a number of blow-pipes. A small steam-boiler of the kind exhibited will enable the analytical chemist to perform a number of operations with ease and despatch which at present are slow and troublesome. The hot blast for all kinds of crucible work will go for hours without attention; filtrations and desiccations can be performed *in vacuo*; the water-bath heated and open evaporations carried on; and all noxious products of evaporation or distillation may at once be removed by the induced current of a jet of steam.

On the same table was a very simple and neat tinman's stove, constructed on thoroughly scientific principles. A single high-temperature flame burns within a fireclay crucible with closed top. Through the side of the crucible are passed the copper tools to be heated. The flame plays on the back end of the copper, so as to avoid burning the tin off the point.

Another novelty was Wright and Co.'s portable Turkish bath, which can be folded up into a very small space, or prepared for use in five minutes. It is safer to use than the ordinary Turkish bath, as those who use it do not require to breathe the hot, rarified air, but have the head out in the cool atmosphere. The heat is produced by gas, at a cost of less than one farthing per bath; and the temperature, which is always under the control of the bather, can be raised to 212 degrees.

## NEW MARKING INK.

A GERMAN scientific publication gives an account of a new marking ink, written by Dr. Bottger. We transcribe the summary of his article from the *Chemical News*:—It appears that the juice of the Anacardium nut (*Anacardium orientale*) contains an oily matter, which, by exposure to air, gradually assumes an intense black colour; this colour is neither acted upon by acids, alkalies, chlorine, or cyanide of potassium. The previously pulverized nut is treated in a closed glass vessel with petroleum ether (benzoline), and, having been digested therewith for some time, the fluid is left exposed to air for spontaneous evaporation. The remaining somewhat thickish fluid is used for the purpose of either writing or stamping, by the aid of an engraved dye, upon linen or cotton. At first the colour is dirty brown, but it becomes gradually intensely black, an effect instantaneously brought about by moistening the linen or cotton with liquid ammonia.

## CIDER BITTERS.

WE give, for what it is worth, the formula for cider bitters, extracted from the specification of an American patent. The invention claims to have for its object to furnish improved cider bitters, to contain lactic acid but no acetic acid, producing a good drink for warm climates and seasons, and which shall be beneficial in bilious complaints, and in many forms of dyspepsia; and it consists in preparing cider from apples, allowing it to ferment, after which apple twigs are boiled in a portion of this cider in the proportion of one pound of apple twigs to one gallon of cider. In this decoction, when cool, are dissolved the whites of eggs, in the proportion of six eggs to one quart of the decoction. One quart of this solution is poured into each barrel. Refined white sugar, birch bark, and wild cucumber (*mangolia glauca*) pods or bark are also put into each barrel in certain proportions.

## CRYSTAL QUININE WATER.

MR. JOHN MORGAN DAVIS, of Penge, has introduced an excellent aerated water under the above title. The slightly bitter flavour is a pleasant addition to a drink similar to lemonade, and with a little sherry, the agreeable nature of the beverage is still further enhanced. This is a novelty with which medical men are likely to be especially pleased.

THE ERUPTION OF VESUVIUS AND ITS EFFECT ON VEGETATION.—The *American Naturalist* says that the newest vegetation has suffered from contact with the ashes, though the effect has been neither seorching nor drying up. The action has not been a mechanical one, for mere closing of the pores of the epidermis could not have caused death in so short a time. The closing of pores and stomata is undoubtedly a secondary cause of death, but only after the lapse of some days. No change was observed similar to that produced by vapour of boiling water. The seorching action of a high and dry temperature occurs only in the immediate vicinity of the volcano. Neither an acid nor alkaline reaction is shown by any change of colour in the flowers or leaves, except a few instances of change to blue, of rose, orange, and violet-coloured organs, which might be attributed rather to an alkaline than acid reaction; but these are few and doubtful. Many phenomena concur in pointing to chloride of sodium as the chief agent in the destruction of vegetable tissue. The salt was present in sufficient quantity in the falling ashes to be readily discernible to sight, and is also met with as an efflorescence in the ashy soil.





[The following list has been compiled expressly for the CHEMIST AND DRUGGIST by L. de Fontaine-moreau & Co., Patent Agents, 4, South-st., Finsbury, London; 10, Rue de la Fidélité, Paris; and 33, Rue des Minimes, Brussels.]

Provisional Protection for six months has been granted for the following:—

3194. T. Cobley, of Dunstable, Bedford, and J. E. Poynter, of Glasgow Improvements in obtaining caustic baryta. Dated 28th October, 1872.
3585. F. M. Lyte, of France, Asnières, chemist. Improved process of treating and purifying crude phosphoric acid, and in the production of soluble phosphates; also for the manufacture of phosphorus, and the treatment of certain residues resulting, therefrom, and phosphato of alumina. Dated 28th November, 1872.
3923. T. Welton, of 13, Grafton-street, Fitzroy-square. Improvements in the application of natural permanent magnets to articles of wearing apparel or jewellery, for curative and other purposes. Dated 17th December, 1872.
3828. L. Valet, of Liverpool, merchant. Improvements in bottles and in stoppers for the same. Dated December 17th, 1872.
3829. J. F. Laekerstee, of 3, Lombard-court, civil engineer. Improvements in the manufacture of hydrogen gas. Dated 17th December, 1872.
3843. G. Haseltine, of London. An improved method of, and apparatus for, rendering and drying animal matter, deodorizing noxious gases, and treating blood to utilize it for agricultural and similar purposes. Dated 18th December, 1872.
3852. A. C. Henderson, of London. Improvements in apparatus for filtering and defecating water by radiation in the mode of cleansing the said apparatus, and in its several applications. Dated 19th December, 1872.
3887. A. Krieger and A. Cauderier, both of the Boro'. An improved stopper for bottles. Dated 21st December, 1872.
3924. W. McAdam, of Glasgow. Improvements in utilizing waste products of chemical and other works in order to render the same applicable for building and structural purposes. Dated 27th December, 1872.
3926. D. C. Miller, of Larkhall, Lanark, N.B. Improvements in distilling, evaporating, or concentrating saccharine and other solutions or liquids. Dated 27th December, 1872.
3949. J. Higgin, of Manchester, and J. Stenhouse, of Pentonville. Improvements in treating waste liquors containing a senical or phosphatic compounds, and in obtaining and applying useful products therefrom. Dated 30th December, 1872.
11. F. Philippi, of Paris. An improvement in smelling bottles. Dated 1st January, 1873.
38. G. Bischof, of Glasgow. Improvements in the purification of water, and in the means and apparatus employed for that purpose. Dated 3rd January, 1873.
42. W. G. Thompson, of Manchester. An improved process and apparatus for extracting oleaginous or fatty matters from liquid or solid substances. Dated 3rd January, 1873.
45. A. A. Croll, of Colman-street. Improvements in means or apparatus for the distillation of ammoniacal liquors, which improvements are also applicable in the distillation of other liquids, and in the concentration of soluble salts. Dated 4th January, 1873.
50. P. Spence, of Manchester. Improvements in obtaining valuable substances derivable from residual liquors produced in the manufacture of alum from natural phosphates of alumina. Dated 4th January, 1873.
77. G. Haseltine, of London. Improvements in hospital beds. Dated 8th January, 1873.
84. A. T. C. Schovers, of the Hague, Holland. Improvements in trusses for the cure or relief of hernia. Dated 8th January, 1873.
87. J. R. Chislett, of Plymouth, Devon. Improvements in apparatus for employing electricity for curative and remedial purposes, and in appliances to be used in connection therewith. Dated 8th January, 1873.
91. S. W. Kinn, of Great Winchester Street-buildings. Improvements in producing heat by electricity. Dated 8th January, 1873.
154. H. Y. D. Scott, of Ealing. Improvements in the treatment of sewage and of the deposits obtained therefrom. Dated 14th January, 1873.
213. G. Haseltine, of London. Improvements in the manufacture of white lead, and in the purification of carbonic acid gas, used in the said manufacture, and in apparatus therefor. Dated 18th January, 1873.
216. L. Stevens, of Washington, U.S. A process for forming carbonic oxide from oxyhydrogen vapour or steam, and an apparatus for utilizing the same for heating purposes. Dated 18th January, 1873.

Letters Patent have been issued for the following:—

1934. W. E. Gedge, of London. A new or improved process for obtaining phosphorus. Dated 1st July, 1872.
2137. J. Dale, of Manchester. Improvements in the manufacture of oxalates of soda and potash. Dated 17th July, 1872.
2141. H. S. Copland, of Duke-street, Adelphi. Improved apparatus for mixing precipitating materials with sewage and removing deposits, which apparatus is applicable also for other purposes. Dated 17th July, 1872.
2183. T. N. Palmer, of Dalton. An improved catamential belt, which may also be used for other purposes. Dated 22nd July, 1872.

2195. W. T. Thompson, of Gracechurch-street. An improved ventilating, disinfecting, and deodorizing apparatus. Dated 23rd July, 1872.
2205. H. A. Dufrene, of Paris. Improvements in concentrating and evaporating sulphuric acid and other liquids, and in the apparatus employed therefor. Dated 24th July, 1872.
2207. B. Hunt, of London. A new or improved apparatus or means for excavating, drilling, cleaning, filling, or otherwise treating teeth. Dated 24th July, 1872.
2286. A. Brown, of London. Improvements and modification in the treatment of phosphate in general, and in the production and purification of phosphoric acid and its combinations. Dated 30th July, 1872.
2328. E. Packard, jun., of Ipswich, Suffolk. Improvements in the manufacture of superphosphate of lime and artificial manure. Dated 3rd August, 1872.
2369. W. R. Lake, of London. Improved nutritious compounds. Dated 9th August, 1872.
2446. A. R. Arrott, of St. Helens, Lancaster. Improvements in the manufacture of carbonate of soda. Dated 16th August, 1872.
2614. B. W. Gerland, of Macclesfield, Chester. Improvements in the manufacture of phosphoric acid, phosphatic manures, alkaline and other phosphates. Dated 3rd September, 1872.
3144. J. C. Browne, of Hampton Wick, and M. Davenport of Finsbury-park Villas. Improved construction of buildings and other structures for the safe storage of petroleum, and other explosives generally. Dated 24th October, 1872.
3492. C. E. Wetton, of Cheltenham, Gloucester. Improvements in portable appliances in magneto-therapeutics. Dated 22nd November, 1872.

Specifications published during the month:—

Postage 1d. each extra.  
1872.

1893. J. Brown. Phosphate of alumina. 4d.
1455. S. Russell. Stoppering bottles. 8d.
1494. R. and F. Porter. Distilling. 10d.
1540. H. Kenyon and others. Manufacture of chlorine and sulphuric acid. 4d.
1563. P. Michaelis. Stoppering bottles. 8d.
1567. P. Michaelis. Internal capsule for bottles. 6d.
1582. J. Mayer. Scissors, shears, and forceps. 8d.
1596. H. Sigatner. Voltaic or galvanic batteries. 4d.
1616. J. H. Denis. Treating and purifying copper precipitates. 4d.
1637. C. Moseley. Condensing the vapours of coal tar naphtha. 8d.
1638. H. Highton. Galvanic batteries. 4d.
1637. D. Nicoll. Rendering woven and other fabrics unflammable. 4d.
1665. W. Darlow. Portable magnets. 4d.
1693. J. H. Johnson. Applying colouring or mucilaginous solutions. 4d.
1695. J. Stevenson and others. Manufacture of dichromates of soda and potash. 4d.
1740. C. A. Faure. Thermo-piles or thermo-electric batteries. 4d.
1806. W. C. and R. G. Sillars and another. Treating animal matters. 4d.

## CHEMICAL SOCIETY.

Thursday, January 16th, 1873.

PROFESSOR FRANKLAND, D.C.L., F.R.S., President, in the Chair.

After the ordinary business of the Society had been transacted several papers were read.

The first, entitled "Notes on various Chemical Reactions," by Mr. Davis, contained observations on the formation of the sulphides of copper and barium; also some notes on the separation of cobalt and nickel. Mr. H. Grimshaw communicated the results of his researches on ethyl-amyl, and its derivatives. After the President had made some remarks on the thoroughness with which this research had been carried out, a communication from Dr. Schorlemmer, "On the Heptanes from Petroleum," was read. This paper contained, among other matter, an interesting account of the separation of isomeric heptylenes by means of hydrochloric acid. A paper by Mr. T. Carnelley, on the "Vanadates of Thallium," was then read. It contained descriptions of several new and complex vanadates of thallium. Mr. Kingzett communicated the results of his experiments on the conversion of sodium chloride into sodium sulphide by the action of hydrosulphuric acid; and finally Mr. P. Braham exhibited some ingenious arrangements which he had made for the prosecution of physical investigations under the microscope.

Thursday, February 6th, 1873.

Dr. WILLIAMSON, F.R.S., Vice-President, in the Chair.

After the usual business of the Society had terminated, a communication was made by Dr. H. G. Armstrong, "On the Action of Sodium on Aniline." A paper "On Anthrapurpurine," by Mr. W. H. Perkin, was then read by the author. Anthrapurpurine is a colouring matter which accompanies alizarine in the crude "artificial alizarine," now so largely manufactured, and employed in dyeing



instead of madder. Like alizarine, it is capable of imparting brilliant and fast colours to cloth mordanted with alumina or iron. The last communication on "Isomerism in the Terpene Family of Hydrocarbons" was also read by the author, Dr. C. R. A. Wright. In it he gives an account of his experiments with oil of nutmegs, and oil of orange peel. The meeting finally adjourned until the 20th inst., when the following papers will be read:—"On Aurin," by R. S. Dale and Dr. C. Schorlemmer, F.R.S.; "Researches on the Action of the Copper-zinc Couple on Organic Bodies. I. On Iodide of Ethyl," by Dr. Gladstone and A. Tribe; "Solidification of Nitrous Oxide," by Mr. Wills; "Action of Hydrochloric Acid on Codeine," by Dr. C. R. A. Wright.

### THE PHARMACEUTICAL COUNCIL.

A MEETING was held on February 5th, Mr. A. F. HASELDEN, F.L.S., President, in the chair.

Present—Messrs. Atherton, Baynes, Betty, Bottle, Greenish, Hampson, Hill, Mackay, Owen, Radley, Sandford, Savage, Schacht, Shaw, Stoddart, Sutton, Urwick, and Williams.

The first reported business was to take the lot for the next Council. The following were declared to go out of office, but are eligible for re-election.

BAYNES, JAMES, 24, Waterworks-street, Hull.

BETTY, SAMUEL CHAPMAN, 6, Park-street, Camden Town, London, N.W.

BOTTLE, ALEXANDER, 37, Townwall-street, Dover.

HAMPSON, ROBERT, 205, St. John-street-road, London, E.C.

HILLS, THOMAS HYDE, 338, Oxford-street, London, W.

RADLEY, WILLIAM VALENTINE, 74, Market-place, Sheffield.

SAVAGE, WILLIAM DAWSON, 30, Upper Bedford-street, Brighton.

The following seven go out by rotation, but are eligible for re-election:—

ATHERTON, JOHN HENRY, Long-row, Nottingham.

BROWN, WILLIAM SCOTT, 113, Market-street, Manchester.

GREENISH, THOMAS, 20, New-street, Dorset-square, London, N.W.

HASELDEN, ADOLPHUS FREDERICK, 18, Conduit-street, London, W.

MACKAY, JOHN, 119, George-street, Edinburgh.

SANDFORD, GEORGE WEBB, 47, Piccadilly, London, W.

WILLIAMS, JOHN, 16, Cross-street, Hatton-garden, London, E.C.

The following gentlemen remain as members of the Council for the ensuing year:—

FRAZER, DANIEL, 113, Buchanan-street, Glasgow.

OWEN, JOHN, 51, Holloway-road, London, N.

SCHACHT, GEORGE FREDERICK, 7, Regent's-place, Clifton.

SHAW, JOHN, 24, Great George-place, Liverpool.

STODDART, WILLIAM WALTER, 9, North-street, Bristol.

SUTTON, FRANCIS, Bank-plain, Norwich.

URWICK, WILLIAM WALTER, 60, St. George's-road, London, S.W.

After the election of members and associates, a list of names of persons who had passed the preliminary examination was presented. This list contained the names of three young ladies, and it was decided that these should be taken separately. Accordingly the males were elected, and the admission of ladies to the Society was brought to an issue.

Mr. SCHACHT inquired if any ladies had ever been admitted to the Society heretofore.

The SECRETARY replied in the negative.

Mr. HAMPSON moved and Mr. MACKAY seconded the election of the following as apprentices or students of the Society:—

Hart, Alice Marion ..... London.

Minshall, Rose Coombes ..... London.

Stammwitz, Louisa ..... Wandsworth.

Mr. SANDFORD moved the following amendment:—

"That Alice Marion Hart, Louisa Stammwitz, and Rose Coombes Minshall be not elected apprentices or students of the Society."

He said the step now proposed was a very important one, and in refusing the privilege, the Council would not be in any way shutting ladies out from the business of a chemist and druggist. He should be sorry to prevent any lady devoting herself to any trade or calling which she desired to follow, but the Society was founded by men and for men, and this was altogether an innovation. There had always been an objection to receiving ladies as members, but if they were once admitted as apprentices they would naturally go on to full membership. He had as much respect for the ladies as any one, and should not have voted with the majority had he been present at the last Council, when it was decided not to allow them to compete for the Sessional prizes. Having admitted them to the lectures, he thought they should be allowed to compete for any prizes which were offered to the students of the class, though not those offered to associates.

Mr. BETTY seconded the amendment. He would not detain the Council by repeating the arguments he had formerly used, though he thought they all applied with redoubled force on the present occasion. The question was whether they should continue to be a society of men, or whether the female element should be introduced. It would not be competent to them to pass this amendment if it went in any way contrary to the intention of the Act of Parliament, but he did not believe this was the case. The 16th clause of the Act, which provided for executors carrying on the business of a deceased chemist and druggist for the benefit of his widow, to his mind showed clearly that Parliament never contemplated the case of such a business being carried on for the benefit of a widower, on the demise of a female pharmacist. There were many little matters which he need not advert to more particularly, which seemed to render it undesirable that ladies should be encouraged to enter the business, and as the admission of ladies as apprentices would lead to their attending the evening meetings, and ultimately perhaps to their appearance at the Council-table, he thought it best to interpose and check at the very outset what he considered a move in the wrong direction.

Mr. SAVAGE could not conceive the object of the opposition to the admission of the ladies who now applied for election. It was quite a mistake to suppose that they would be inundated with ladies; the few who would come amongst them were exceptional, and might well receive exceptional privileges. The clause in the Act which Mr. Betty had referred to would justify him in supporting the admission of ladies, because it was one of the most anomalous clauses in the statute; and it was evidently a great mistake, as it was there enacted that ladies should be precluded from carrying on the business, if they were capable of doing so, after the death of their husbands. If ladies had the moral courage to undergo an examination and to obtain the qualification which was granted, irrespective of sex, they ought to be allowed to go through the whole curriculum, and be encouraged in so doing.

Mr. WILLIAMS said Mr. Betty's argument, founded on the Act of Parliament, had really nothing to do with the question. It was not whether these ladies would become pharmaceutical chemists, which they might do already, but whether they should become connected with the Society. There was no doubt this was the first step to admitting ladies to membership, because they would naturally proceed from studentship to associateship, and then to full membership. The question was so serious and important that he should like it deferred for further consideration.

Mr. URWICK thought the matter had better be settled at once. If it really were the will of the majority of the Society that ladies should be members of the Council, he should be quite willing to see them elected. But it should also be remembered that it would appear by the report of the last preliminary examination that, in refusing to elect these ladies, they would be rejecting the very flower of the intellect which attended, for it appeared that one of these ladies was at the top of the list.

Mr. BETTY explained that he quoted the 16th clause of the Act of 1868 simply to show that in not admitting ladies the Council would be in accord with the intention of the legislature at the passing of the Act, as there was no provision made for them in it.

Mr. HAMPSON said when this subject was brought forward at the last Council, he was told that these ladies were in a



measure out of order in applying to compete for the prizes, because they had not passed the examination which would make them eligible. Now he was told that that was of no effect at all. He did not see the necessity for considering the matter any further; he simply wanted the matter treated from a common-sense point of view. The Act permitted ladies to become pharmaceutical chemists, and therefore Mr. BETTY's argument on that head, as far as he could see, came to nothing. If they were permitted to become chemists and druggists, surely they should be encouraged to become students in every sense of the word.

Mr. SUTTON said when this question first came up he was rather opposed to the admission of ladies in any way to the business, but his views had undergone a change; and he thought it really was a question for serious consideration whether the occupation of dispensing was not one which they ought to be encouraged to follow. For his own part, he believed that many young men were not nearly so careful, cleanly, and methodical in their habits as properly trained young women; and for his own part he should feel no objection, on principle, to the introduction of them into the trade. It was admitted they might attend the lectures, and having done that, he thought this further step should not be denied to them.

Mr. SCHACHT remarked that a distinction had been drawn by Mr. Sandford between excluding ladies from the legal qualification to earn their livelihood as chemists and any claim they might have to become members of the Society, thereby contending that the Society was of a private nature, and had a perfect right to regulate its own affairs according to the wishes, or even whims, of its members. He could hardly take that view of the case at present, for they were not now simply a private Society; since the passing of the last Act they were a Society which had imperial powers, and if it were of advantage, as it was generally considered, to any member of the trade to become a member of the Society, it was certainly putting such persons under a disability if they were refused the privilege. The Council, in his view, had a certain trust imposed upon them which they had no right to exercise selfishly, but were bound to do so with the largest liberality possible. Anything which excluded a lady from the same advantages which the Society offered to men was a disability placed upon them on account of a natural accident which might as well be applied to men having hair of a particular colour. No one had shown that the occupation of pharmacy was unsuited for ladies, and that being taken for granted, it seemed to him an act of tyranny to exclude any one from the advantage of that Society. He therefore hoped the resolution would be carried by a large majority.

Mr. BOTTLE asked under what section of the bye-laws it was proposed to admit the ladies. He did not think section 10 met the case, because that applied to persons who were assistants or apprentices, which he did not understand these ladies to be. He suggested a compromise that the ladies should be made honorary associates, and ventured to hope that the matter might stand over for another month, in order that this idea might be considered.

Mr. BETTY also advocated an adjournment of the question.

Mr. URWICK said the ladies did not wish to be admitted on any but equal terms with the opposite sex.

The PRESIDENT said he did not see why ladies should be admitted to the Society simply because they had passed the Preliminary examination; many gentlemen passed that examination who never went any further. He should vote for the amendment.

The amendment was then put with the following result:—

*For*—Messrs. Atherton, Betty, Bottle, Greenish, Haselden, Radley, Sandford, Stoddart and Williams.

*Against*—Messrs. Baynes, Hampson, Hills, Mackay, Owen, Savage, Schacht, Shaw, Sutton and Urwick.

The amendment was therefore lost.

The original motion having again been put,—

Mr. WILLIAMS moved the following amendment, which was seconded by Mr. Greenish:—

"That the question of the election of Alice Marion Hart, Louisa Stammwitz, and Rose Coombes Minshall, be deferred until the meeting of Council in June next."

Mr. BETTY supported the adjournment of the question.

Mr. HILLS said although he had voted against Mr. Sandford's amendment, he thought it might be better to delay a final settlement until after the annual meeting.

Mr. MACKAY said that what had been said did not alter his opinion one iota, that the Society would be stultifying itself to a certain extent, if it refused admission to these ladies. Under the Act of 1868 no one denied that ladies were to be admitted to the Modified examination, or that several ladies came up for that examination, passed it, and were at this moment on the register as chemists and druggists. As so far as he knew no one was able to show that they were not in all respects as fully qualified to conduct the business as any one else. He could not follow the argument advanced as to the propriety of deferring this question until the annual meeting; for he thought if they were not competent to settle such a simple question that they were not worthy of their position as councillors of the Society. He was not beset by the terrible fear which some seemed to feel, that if ladies were admitted to the educational department of the Society, and to the position of apprentices, associates, and members, they would come forward in such numbers as to swamp the male element. But even if a dozen, 100, or 500 ladies entered the Society, it did not follow that they would be elected on the Council. They could not be elected unless it were the general wish of the whole body, and if it should happen that that was the case, he should certainly have no objection to seeing ladies sitting there. Still he looked upon that as not at all probable, though barely possible. He thought deferring this question for four months was quite unnecessary.

The amendment being put, the following gentlemen voted:—

*For*—Messrs. Atherton, Betty, Bottle, Greenish, Haselden, Radley, Sandford, Stoddart and Williams.

*Against*—Messrs. Baynes, Hampson, Mackay, Owen, Savage, Schacht, Shaw, Sutton and Urwick.

Mr. HILLS did not vote on this division, consequently the numbers were equal, whereupon the chairman gave his casting vote in favour of the amendment.

#### NORTH BRITISH BRANCH.

Mr. MACKAY presented a report from the North British Branch of the Pharmaceutical Society, from which it seemed that though they had £67 19s. 5d. in hand, and had got into their new apartments, they were still not perfectly satisfied, and now asked for a set of specimens for their museum. He urgently invited the President to come down and see for himself what was required. Mr. SHAW thought the wholesale druggists would be willing to supply the needed specimens, but Mr. SCHACHT and Mr. HAMPSON suggested that what was necessary might be supplied without having recourse to outdoor relief. The President will visit Edinburgh in April.

After the transaction of some personal business, some

#### ALTERATIONS IN THE BYE-LAWS

were proposed for the consideration of the Council. They were read by the President, and discussed *seriatim*. Those of interest to the trade generally were the following:—

##### PRESENT.

###### Section 1, clause 12.

All persons becoming Members of the Society, in exercise of the privileges conferred and defined by Sections 18 and 19 of the Act, 1868, shall on election pay an entrance-fee or sum of two guineas, exclusive of an annual subscription.

The only alteration in this, as will be seen, was the substitution of one guinea entrance-fee instead of two guineas.

Mr. MACKAY thought this was a great mistake, and if a vote were taken upon it, it would be settled without further question.

Mr. OWEN believed, on the contrary, that a vast number were kept away from the Society, owing to the payment of an entrance fee of two guineas.

Mr. URWICK said he had given notice of a resolution to admit all chemists without an entrance fee, and therefore, of course, he should support the alteration. He did not know whether they would have many more or less, but he thought they should be liberal and ready to admit into the Society everybody, provided their character and position were respectable. It should not be a question of money whether a man should join the Society or not. For his own part he should like to see the entrance fee abolished altogether.

##### PROPOSED.

###### Section 1, clause 12.

All persons becoming Members of the Society, in exercise of the privileges conferred and defined by Sections 18 and 19 of the Act, 1868, shall on election pay an entrance-fee or sum of one guinea, exclusive of an annual subscription.



Mr. **ATHERTON** said there had been no general demand made for such an alteration, and he saw no necessity for it. It would not be doing injustice to those who had paid the higher entrance-fee.

Mr. **SHAW** thought the Council were unanimous on a former occasion, and declined to make any alteration such as was now proposed. He should object most strenuously to the proposed innovation. If a member discontinued his subscription and fell into arrear, by the section they had just adopted they reserved to themselves the right to make him pay five guineas before readmitting another man, who had never paid anything towards the fund of the Society, on payment of one guinea only?

Mr. **STODDART** said he should oppose the alteration.

Mr. **SCHNACHT** said it was absurd to reduce the entrance-fee in the first instance, and at the same time to charge an old member five guineas for restoration.

Mr. **BETTY** said the entrance-fee of two guineas was imposed in 1868 on all gentlemen who wished to enjoy the benefits of the Society, in order to defray the great expense occasioned by the passing of the Pharmacy Act, and by other matters connected with the conduct of the Society. They then undertook to register, free of cost, all those who chose to apply, and that was done at a very considerable expense, and he doubted whether the entrance-fee of two guineas already received had recouped the society the outlay then incurred. He saw no reason now to reduce that fee to one guinea. If the argument was that more would be induced to join, he did not think that was worth consideration. Prior to the passing of the Act careful estimates were made as to the number of "outsiders," as they were then called, who might be expected to come in; and he believed that estimate had been pretty nearly justified. He did not think that the reduction of the entrance-fee would cause any appreciable increase.

Mr. **SAVAGE** mentioned a case which had recently come under his own notice, in which a gentleman told him that he should have joined the Society a year ago if it had not been for the two guineas entrance-fee, which he strenuously objected to.

Mr. **GREENISH** believed that the reduction in the entrance-fee would be the means of bringing in many new members, and the loss from this source would be very trifling; but he did not look at it altogether from a pecuniary point of view. He considered that if the alteration were adopted, it would be an additional element of strength in the Society.

Mr. **BAYNES** said he should support the one guinea entrance-fee, because he did not think the little difference to the Society was worth mentioning. He thought they were now making a fresh start, and should induce every one they possibly could to join.

Mr. **BOTTLE** opposed any alteration, saying the bye-laws were carefully settled after the passing of the recent Act, all these matters being taken into consideration; and the same individuals composed the class affected by this bye-law at that time as now. He did not think it was consistent with their own dignity that they should vary the fees in this way, and, like a Dutch auction, getting as many as they could at two guineas, then reduce it to one guinea; get as many as they could at that price, then, afterwards, reduce it to half-a-guinea, and then, finally, to five shillings. He did not believe that any great number would be attracted by the lowering of the fees, because any cautious man would say to himself that as the fees were being lowered, he would wait until they reached the minimum.

The **PRESIDENT** did not think it would be just to those who had paid two guineas to reduce the entrance-fee to new comers, nor did he think any large additional number would be induced to enter. The guinea subscriptions barely paid the expenses of membership.

On being put to the vote the proposed alteration was lost.

#### PRESENT.

##### Section 10, clause 16.

All persons before registration as Apprentices or Students shall pass the First examination, and shall pay a fee of two guineas, whereupon they

#### PROPOSED.

##### Section 10, clause 16.

All persons before registration as Apprentices or Students shall pass the First or Preliminary examination, and shall pay a fee of two guineas,

shall be registered as Apprentices or Students.

whereupon they shall be registered as Apprentices or Students.

After the 31st day of December, 1874, no person shall be admitted to the Minor Examination who shall not have attained the full age of twenty-one years. After the 31st day of December, 1876, no person shall be admitted to the Minor examination who has not been engaged or employed as an Assistant, Apprentice, or Student at least three years previously.

After the 31st day of December, 1876, the Board of Examiners shall cease to hold the First or Preliminary examinations, except in London and Edinburgh, and persons desiring to be registered as Apprentices or Students shall pass the Society's examinations in London or Edinburgh, or produce certificates of having passed either at Oxford or Cambridge local examinations, the examinations of the College of Preceptors, or of some other examining body, previously approved by the Council of the Pharmaceutical Society, provided such examination includes the Latin language and arithmetic.

Mr. **WILLIAMS** said he thought it would be convenient to omit the consideration of the first paragraph of the amended clause, because the whole question of fees could be considered afterwards.

Mr. **HAMPSON** said he was sorry to say he did not agree with the majority of the Parliamentary Committee in recommending this amended bye-law, because he thought it was introducing a great change, and one contrary to the spirit of the Act. The charter of 1843 gave power to the Society to examine candidates in such manner as the Council thought proper. The Act of 1852, which gave them further powers for the safety of the public, authorized the registration of such as passed the examination. Authority was also given by this Act to frame bye-laws proper and necessary for the purpose contemplated by the charter and the Act, and a detailed definition was given as to the nature of the examination intended, but there was no mention or allusion to any condition with which the candidates were to comply, other than the ability to comply with the tests imposed by the examiners, and thus showing that they possessed a competent and practical knowledge. The Act was framed with a view to the safety of the public, and not from any exaggerated notions of pharmaceutical attainment. In the preamble to the Act of 1868, the same plea on behalf of the public was set forth, and by this Act the Society was entrusted with large powers, including the power of compulsory examination of all persons intending to follow the business of chemist and druggist. But that Act gave no power to prescribe either the age at which the examination should take place, or that any time of service should be previously passed. Now the proposed new bye-laws and regulations agreed neither with the letter nor spirit of the charter or Acts of Parliament in this respect, but constituted an unwarrantable innovation, and as the Council no longer represented a small voluntary association, he would urge upon them not to be too hasty in making new regulations which had not been proved to be either necessary or expedient. He was well aware that the Board of Examiners had recommended these changes, and that these recommendations were adopted, but he contended that they were not properly discussed, but were passed with unusual precipitation. Therefore he considered he was quite justified in discussing the matter on



this occasion. He had more faith in the examiners than they had in themselves, and thought they were fully competent to test the qualifications of the candidate without arbitrarily fixing the age and intervals between the examinations, or prescribing that he should have passed any specified time in the business. He had not a word to say against the propriety and usefulness of the ordinary mode of entering the business, if it were done voluntarily, but he had the strongest possible objection to tying down the hands of the candidates in this way, and was sure that no good results would accrue from this source. He might be excused for remarking that if these regulations had been in existence some years ago, he should not have been a member of the Council or in the trade at all. He felt positive that this was a retrogressive step, and as other bodies, such as the Apothecaries' Company, no longer required a term of apprenticeship, he thought it was a great pity to introduce these limitations. He moved an amendment that the second paragraph be rejected.

Mr. SAVAGE seconded the amendment.

Mr. BOTTLE submitted that the proposed alteration was strictly in accordance with the terms of the Act of 1868, referring especially to clause 4. If the Legislature contemplated that a man, in order to pass the Modified examination, should have been three years in business, it could not be inconsistent to ask that a young man who came forward subsequently should serve three years before passing the Minor examination. There were other clauses giving the Council power to make such bye-laws as they thought fit, and therefore he contended it was fully within their power to make the proposed alteration.

Mr. MACKAY, on the whole, agreed with the proposed amendment, though he should have preferred the age being fixed at twenty instead of twenty-one. At the same time he would not take a vote upon that subject, especially as it would not come into operation until after 1874. His own idea, however, would be to make twenty the age for the Minor, and twenty-one for the Major. With regard to the objection to the term of apprenticeship, he thought that matter would right itself before the new bye-law came into operation, because there was a great feeling in Scotland, and he believed it would be so in England, that no apprentices should be taken who had not passed the Preliminary examination. Now, after he had passed that examination, it was quite right he should spend three years in practical acquaintance with the business before passing the Minor. In some branches of the legal profession it mattered not what was the age of the person applying—whether it was twenty, thirty, forty, or even sixty, he must serve a certain number of years and give evidence of having been so engaged before he could obtain the qualification he desired.

Mr. SHAW said this matter was fully discussed three months ago, and he did not think it ought to be reopened. He believed the proposed alteration was in strict accordance with the spirit of the Act, and it was impossible that a person could have a practical knowledge of the business without serving three years in it. With regard to the age, that had been fully discussed, and it had been almost unanimously decided that twenty-one should be the limit. He must say, however, that he took exception to the last paragraph.

Mr. URWICK said it was true this matter had been previously discussed at the Council when he was in a minority, and he supposed he should be so still, for he had a strong objection to seeing industry and intellect weighted. By this clause they put a weight on young men who were persevering and intelligent, confining them to three years' experience and the age of twenty-one, when they might be fully qualified at an earlier period. He did not think in all cases three years were necessary to learn the business. It depended somewhat on the age at which a young man entered, and also on the education the lad received beforehand. It was very different now, when youths were educated up to the age of sixteen or seventeen, to what it was years ago, when boys were apprenticed at thirteen or fourteen. If a young man were apprenticed at sixteen or seventeen, and applied himself diligently to his business, so that he could pass the Minor at nineteen or twenty, he was worth to himself at least £10 a year more, and it was not fair to prevent him getting that. He thought the examiners themselves ought to be able to test the competency of a young man without reference to his age.

Mr. WILLIAMS was astonished at the discussion on this clause, since it was simply for the purpose of giving legal force to the regulations adopted by the Board of Examiners, which the Council had already adopted.

Mr. SANDFORD said he thought the matter had been already settled. As to the age of twenty-one years, he might say that at the time the Act of Parliament of 1868 was under consideration, the Government were very anxious, in the interest of the public safety, to introduce that requirement for passing the examination, but it was then waived in obedience to the wishes of the Council. However, he believed the Council were now pretty well convinced that the introduction of such a limit would be beneficial. The great point was to ensure the proper education of youths coming into the business, and therefore it was proposed to require an interval of three years between passing the Preliminary and the Minor, which would ensure not only sufficient education to begin with, but in effect a certain amount of practice in the business. It had been proposed to substitute the words "engaged and employed" for the word "registered," but he thought registered was the proper word, as a man would not register himself as an apprentice unless he intended to follow up the business. Registration was the legal thing, and he should prefer that word being retained. They did not require apprenticeship to any particular men, they only insisted that the candidates should have been occupied a certain time in the business. He had no doubt about their power to make the bye-law.

Mr. GREENISH would have preferred fixing the limit of age at twenty.

Mr. SHAW said it was stated that it was illegal to admit persons under age to the qualification of chemists and druggists.

Mr. BAYNES said the great point was that directly a man had passed the Minor examination he could immediately commence business, and he thought twenty-one was quite soon enough.

Mr. HAMPSON having briefly replied,

The PRESIDENT then proposed to put the amendment, but

Mr. SAVAGE stated that he had only seconded it because he objected to the age of twenty-one years as the limit, and not with the intention of defeating it altogether.

The amendment, therefore, fell to the ground, and the paragraph was adopted.

With regard to the third paragraph, the PRESIDENT said he should recommend the rejection of it altogether. He thought that if youths were either obliged to pass the Oxford or Cambridge examinations, or to go to Edinburgh or London to be examined, it would put them to a great deal of inconvenience.

Mr. GREENISH said there was a general impression that these examinations in the country were not satisfactory, and the desire was to abolish them altogether.

The PRESIDENT said they were as well superintended in the country as they were in London. He thought all the dissatisfaction arose in consequence of an unfortunate circumstance which took place on one occasion, but which could not take place again.

Mr. BETTS said the Committee recommended this change, he believed, not as a matter of efficiency or otherwise in the Preliminary examination, but in order to separate the technical examination of the business which strictly belonged to the Society, from a matter which was already recognised as being one which could be equally well discharged by other bodies whose certificates were even now received. A change was proposed for the purpose of convenience and carrying on the Society's business, and with a view to draw a broad line between examining a man's knowledge of his business and that preliminary knowledge which would enable him to learn it. It had been originally proposed to abolish the Preliminary examination altogether in connection with the Society, but a compromise had afterwards been arrived at by which it was proposed to retain these examinations in London and in Edinburgh, and he thought that would meet all the difficulties of the case.

Mr. SAVAGE expressed himself in favour of retaining the Preliminary examinations as at present, on the ground that their abolition would greatly inconvenience students.

Mr. URWICK was of the same opinion.

Mr. SANDFORD hoped that the paragraph as amended would be passed, or else that the Council would go back to the old



system under which the students either had to come to London to pass the examination, or produce certificates from some competent authority. He thought these examinations in the country were often most unsatisfactory, and hoped they would not be continued.

Mr. MACKAY did not think the present system was unsatisfactory, and saw no reason to effect a change. He had had from 24 to 30 students under examination at Edinburgh, and never discovered the slightest irregularity.

Mr. BETTY hardly thought Edinburgh was a fair criterion.

On being put to the vote the paragraph was rejected by a considerable majority.

The following new clause, to follow number 19, section 10, was agreed to:—

*To follow clause 19, section 10.*

No person shall be admitted to the Major examination who has not passed the Minor examination at least three months previously, except in special cases, approved and allowed by the President of the Council for the time being.

*Examination Fees.*

Mr. WILLIAMS moved,

"That the fee for registration upon passing the Preliminary examination be £2 2s.; for registration as a chemist and druggist upon passing the Minor examination, £5 5s.; and for registration as a pharmaceutical chemist upon passing the Major examination, £3 3s."

Although several members of Council had left, he hoped this would be assented to on the understanding that it might be reconsidered at the next Council meeting.

Mr. SAVAGE seconded the motion.

Mr. BETTY thought they could not do it in that informal way.

The PRESIDENT thought it was a mistake to make a man pay two guineas more before he took up the status of chemist and druggist, and let off the man who passed as a pharmaceutical chemist to the same extent.

Mr. WILLIAMS said the man who passed the Minor examination got the full benefit of the Act of Parliament. It gave him power to keep open shop, and he held that was the one which he ought to pay the heaviest fee for. At the present time he stepped in for three guineas, and he believed this stood in the way of many coming forward to pass the Major examination. There was a great outcry made is to there being so few pharmaceutical chemists coming forward, and it was said there might be a difficulty hereafter in recruiting their members. It was with a view to remedy this that the change was proposed. The Minor examination was previously intended for assistants; and as it now gave a man a full qualification to enter a business, it was only fair the fee should be raised.

Mr. MACKAY differed altogether from Mr. Williams on this point, seeing that this examination was now compulsory by Act of Parliament, and that the man who passed it must have already paid a two-guinea fee for the Preliminary. He considered three guineas quite enough, especially as compared with the fees paid in other higher professions. In Edinburgh, a man could pass the examination of the College of Surgeons for a fee of ten guineas, and get a diploma, and even if he became a physician he had only five guineas more to pay. If he went on to the further degree of Master in Surgery, there was only a further five-guinea fee. In Glasgow, the diploma of the Faculty of Physicians and Surgeons might be obtained for a ten-guinea fee; and if chemists and druggists were going to be weighted in this way with additional fees, it would simply have the effect of driving many men to scrape together a few guineas more to qualify themselves for the higher examination of the College of Surgeons, and pay the ten guineas, when they would open shop and do as they pleased. It must not be forgotten, either, that there were many young men to whom an extra two guineas at the expiration of their apprenticeship appeared a very large sum of money.

Mr. BETTY said the fees payable in London on taking up a medical degree were much higher than in Scotland, amounting to about thirty guineas on the average.

Mr. URWICK was in favour of the proposed alteration, and did not think it would tell so much against the Society as some thought. He believed that the number of pharmaceu-

tical chemists would continue to fall off, and that the expenses must be paid by those passing the Minor. The whole course of instruction was kept up for their benefit, and in the course of time they must expect that the examiners' fees and other expenses would increase, and therefore he saw nothing unfair in increasing the examination fee.

Mr. GREENISH deprecated any alteration. He considered it would be specially hard on those who passed the Minor and still continued assistants. It must not be taken for granted that every one who passed immediately went into business on his own account. Nor would lowering the fee for the Major induce men to present themselves for that examination. No doubt if the payment of the fee was a qualification for the ordeal, there would soon be a large addition to the number; but it was the examination, not the fee, which was the obstacle.

Mr. HAMPSON said, looking at the matter broadly, if three guineas paid the expenses, seeing that the examination was compulsory, he thought they ought to be satisfied.

Mr. BETTY said he doubted whether the annual meeting would sanction a bye-law raising the examination fee, unless a clear necessity for it could be shown, which was not the case.

On the question being put, the proposed alteration was lost by a large majority.

It was then arranged that the alterations in the bye-laws, as now agreed upon, be submitted to the Society's solicitor to be put into legal form.

### STRIKE IN THE ELASTIC BANDAGE TRADE.

A SMART contest is going on in Nottingham, between Messrs. J. S. Haywood and Son, elastic bandage makers, and the workmen in that trade. The firm wanted to get some work done in a shorter time than the Union thought it should be done in; consequently, all the men were called out on strike. On this, Messrs. Haywood, wanting the rooms in their factory for other purposes, sent their machinery elsewhere to be worked. This called forth a placard from the Secretary of the Union, which stated:—"There are some unprincipled men aiding the firm by taking away the machinery that the men have left. Hoping all Union and non-Union men will try to frustrate their bad design—"

Mr. Haywood responds to this attack by another placard, a part of which we quote, for it shows how unworthy a great proportion of British artisans have shown themselves to be of the sympathy and support which has been perhaps too readily accorded to them.

"Now what have I done? I did not turn the men away, or lock them out. I have been paying the best price in the trade, and it has been acknowledged that a man could earn more money in my factory than elsewhere; but I find upon inquiry that my offence is in endeavouring to get my orders completed in a shorter time than the Union think I ought to do.

"During the past year I have had orders in my books urgently wanted, and have had the mortification of seeing men come to work on Wednesday morning, instead of Monday, and then only at 9 or 10 o'clock; and instead of earning £2 or more per week, only getting their 15s. or 20s.; and because I put other machinery into the hands of more industrious men, I am accused of bad designs and causing strikes.

"I am thankful there are working men with more sense than to be dictated to by a public-house conclave, who live upon the earnings of their deluded followers; and would suggest whether it is not time all sensible men, both masters and workmen, should make a stand to free themselves from the tyranny and dictation of men who will not work themselves, and would deter others from making the best of their labour; who do not understand business, and would drive all the trade from the country."

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Joint Author of a Book on Water Analysis, and of the  
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#### THE COUNCIL VERSUS WOMAN.

A STRANGE debate took place at the recent Meeting of Council, February 5th, 1873. It related to three ladies—Alice Marion Hart, Rose Coombes Minshull, and Louisa Starnmwitz. It is specially with respect to the two latter that we have to speak, and we commend these remarks to the serious attention and the sense of honour of members of the Pharmaceutical Society. The facts are these:—At the last Preliminary Examination held in London, forty-one candidates submitted themselves to the ordeal, two ladies amongst the rest. It was proposed to the delegate-examiner of the day that they should remain either in the secretary's room, or some place of comparative retirement. This suggestion was instantly refused; they came in with the rest, at the same time, and left in company with the other students. They met that courtesy, neither more nor less, which every candidate may expect



with confidence from the Board of Examiners. Their papers were submitted in the usual manner, and both passed, one with considerable distinction. Lastly, in due course, they applied for their election as apprentices or students, whereupon, their own names, and that of the first-mentioned lady having been sifted out, Mr. Sandford moved the following amendment:—"That Alice Marion Hart, Louisa Stammwitz, and Rose Coombes Minshull be not elected apprentices or students of the Society."

We are often asked, what is the exact nature of the Preliminary Examination? and we have felt a delicacy in replying, fearing lest we might be expressing our private notions rather than strict matters of detail. But on referring to the "Calendar of the Pharmaceutical Society of Great Britain," printed for the Society, we find the Preliminary Examination defined thus:—"The First or Preliminary Examination, for Registration as Apprentices or Students." This was our own idea, but we are glad to shield our opinion under the wing of official sanction.

Two thoughts arise, and two questions also. We hold it as our deliberate opinion, that no member of Council had the right to offer such an amendment even for the purpose of creating a discussion. That two of the ladies should have been allowed to be examined was either right or wrong—if wrong, that was the fault of the Council, and they must take the present consequences; if right, they must let the ladies act upon their own instincts, and leave them undisturbed.

The Board of Examiners had no authority to refuse these ladies; the Board simply exacts definite requirements, and these were complied with to the letter. Putting it in the mildest form, it was scarcely delicate in the Council to upset the natural working out of the decision of the Examiners. Each member of that Board may claim that these ladies having satisfied the requirements should not be denied that further advantage to which they are absolutely entitled.

Now two thoughts spring up unbidden: by whose authority, and acting upon what law, was an invidious selection made in the list of names presented formally on this celebrated Wednesday? Second,—On what grounds were the remaining candidates elected? Surely not because they were men, else one or two thousand more in the immediate vicinity of the square might have claimed the same privilege. The journal informs us that it was in consequence of their having passed their Preliminary Examination. Was it to gratify themselves; to indulge in the luxury of three hours' anxiety; or to enjoy a morbid pleasure in a possible failure, that they sat there grinding over Cæsar, smiling at the child's arithmetic, and doing English composition? They went up with the firm hope that if success smiled upon their efforts they might be allowed to continue their studies and connect themselves with that society, of which they were likely to be the ornaments.

These ladies, *being permitted to attend*, had the same hope, and in common with their fellow-candidates satisfied the Examiners; they may demand the same result, and we believe that the Council have not a shadow of power to postpone their election until an annual meeting has taken the matter into its consideration.

One word about the discussion which issued. With deference be it said it did not affect the matter. Fear was expressed that ladies *might* come in crowds, *might* rival their companions, *might* be elected on the Council, *might* sit on the Parliamentary Committee, tamper with the bye-laws, and, as a final Ichabod, *might* occupy the Presidential chair. This reminds us of the old anecdote—"Pray, Sir, what

might your name be? It *might* be Julius Cæsar, but it isn't." John Mackay, of Edinburgh, alone, *splendidus audax* if we may parody from Horace) spoke about the right or wrong of the contemplated refusal.

Hereafter it is competent for this or any future Council, with the consent of the Privy Council, to make fresh regulations, and should they determine that ladies shall not be admitted to competition, shall not be allowed to enter pharmacy as a profession, shall not attend lectures or have the chance of joining our Society as members, they can so decree. As regards the transaction of the month of January, Alice Marion Hart, Rose Coombes Minshull, and Louisa Stammwitz can demand their own admission as students or the rejection of the others who were admitted; and to defer their admission is an unrighteous thing—one, we doubt not, as illegal as it is unjust.

#### RECONNOITRING THE CHANCELLOR.

BRITISH tradesmen will read the reply of Mr. Lowe to the deputation from the Chamber of Trade, on January 29, on the subject of Civil Service Co-operative Stores, with mingled indignation and satisfaction. Indignation at the contemptuous and impertinent sneers which the Chancellor of the Exchequer thought fit to fling at tradesmen as a body, and satisfaction at seeing how utterly hollow and fragile is the defence which the champions of Civil Service traders can rely on. The deputation waited on Mr. Lowe with a clear case, and with a simple grievance. They told him distinctly that what they complained of was net co-operation, not Civil Service co-operation even, *but Civil Service trading*. This may be a sentimental grievance—let it be called such; but it is a grievance for all that, as palpable and as bitter to those who are injured by it as any which has been hoisted in our political agitations this century. Tradesmen are neither fools nor babies; they well know that the Government has no power to protect them from fair competition, and they told Mr. Lowe, as clearly as words could express their meaning, that it was not for that purpose they had come to him. That gentleman's reply was practically nothing more nor less than giving them the lie direct. He almost entirely ignored the points which they had put before him, passing lightly over the main issue, which had been raised by expressing his regret that the Civil servants had gone beyond their original scheme, and then entered on a disquisition on subjects which the deputation had not come to talk about, offering his advice "with all friendliness," and intimating very plainly that tradesmen were a class which society could very well do without, destined before long to be "driven out of the market."

Let us not be misled by this burlesque statesmanship, nor induced for a single moment to turn our eyes from the one issue before us, unless indeed it be to look one step further and resolve on overhauling the Civil Service from end to end. That is very essentially a taxpayer's question, as well as one of imperial moment. But we have not to consider it just now. Our present business is to demand from our Legislature the removal of an injustice which stings every tradesman in London and throughout the empire; an injustice which must be met by wiser men than the present Chancellor of the Exchequer, who sees in it nothing more than a means of "driving from the market" some insignificant shopkeepers, some miserable excrescences on the paradise of "society."

But we have said that Mr. Lowe's speech gives cause for



satisfaction as well as indignation. He might well object to linger on the points which Mr. W. H. Smith suggested to him, for a weaker defence of his position surely no man ever made. Stripped of its irrelevancies, his speech may be thus reported:—"I disapprove of the Civil servants entering into trade—of their becoming salaried managers of stores, but I do not possess the power to prevent them from doing so; and not only do I not possess the power, but I am rather inclined to think that it would be scarcely fair if I should ever have the power. We have made a contract with these Civil servants, and we have no right to introduce fresh conditions into our bargains." That is fairly the sum and substance of Mr. Lowe's reply to the grievance laid before him. Summarized still more briefly, it might be thus rendered—"can't—won't."

As calmly as if he were demonstrating an unanswerable mathematical theorem, the right honourable gentleman, Her Majesty's Chancellor of the Exchequer, and the representative of the University of London, dispenses this flimsy nonsense as argument. It is hardly possible to answer it; it is not even specious. If the Government disapproves of the Civil servants trading, they ought to stop it promptly. They have the power to do so, for they are *ex-officio*, and for the time being the employers of those servants, just as a railway board of directors has control over its *employés*. To say that the possession of such a power would not be just and fair is an incomprehensible assertion. A similar argument might be employed to permit the retention of every kind of scandal and abuse which might grow up amongst us. We say once more that it is immensely satisfactory to find that our opponents have no better arguments than these.

But there was one sentence among Mr. Lowe's remarks, which deserves a paragraph all to itself, on account of its charming candour and cynicism. Said the speaker, "Suppose I brought in a bill and carried it through all difficulties—no easy matter, for bear in mind that the House of Commons"—is very rigid in its notions of justice? Not at all. It may be, but Mr. Lowe did not say so. To his mind the great difficulty in passing such a bill would be, not in its unfairness, which he had that moment maintained, but in the fact "*that the House of Commons consists of consumers, and this would not be a consumer's bill.*" Shade of Hampden! what shall we say to this? Mr. Lowe knows more of the House of Commons than we do, and here he depicts its character. May heaven in mercy soon send us a despot to replace the six hundred and fifty cupboard-minded consumers who now rule us!

The evening after visiting Mr. Lowe, the National Chamber of Trade held its second annual meeting in Exeter Hall under the presidency of Mr. W. H. Smith. We have a brief report of the meeting elsewhere, but we wish in this place to express our appreciation of the hearty and earnest manner in which this Chamber is exerting itself on behalf of tradesmen. It has secured the support of many influential members of Parliament and other gentlemen, and it well deserves the aid of that class for which it fights. The work that has been done has been both economical and effective, but the trading classes must be willing to spend much more money, if they are resolutely determined to put down this unhandsome and, as it should be, illegal conspiracy; with right on our side, and plenty of money in our hands, we should have no fear for the result. But with the Government against us, with a House of Consumers to appeal to, and with a compact, well-organized, and greatly interested foe, it will be admitted that our righteous cause must have up-hill work before it can hope to prevail.

## THE LEGION OF HONOUR.

A FEW pages of the "Pharmaceutical Calendar" contain a roll of names which it is especially interesting to glance through. The section we refer to is headed "List of Students who have Obtained Prizes and Certificates of Honour and Merit from the Foundation of the Society." We are far from thinking that all the worth and nobility of our profession is concentrated at Bloomsbury, or has emanated therefrom; but we should be blindly prejudiced indeed if we failed to recognize the striking frequency with which those who have been sent forth from the School of Pharmacy, with the hall mark of its approval, have thoroughly justified in after life the honours presented in their youth. It must be remembered that those who are included in this list are, as a rule, the young pharmacists most favoured by fortune; and, as we have written on former occasions, we reserve our most sincere respect for those comparatively unknown ones who, by daily sacrifices and incessant labour, climb that most difficult part of the ascent, up to the stage from whence the higher class start. But we will not on that account forget to pay due honour to the men who have bravely acquitted themselves both in student life and in business life, and have raised the pharmacy of our country to the position it now occupies.

Beginning in 1842, the first year of the establishment of this School of Pharmacy, we find that in that year Robert Bentley received a prize for Botany. His name stands alone—no peer, no competitor—and the omen has been splendidly fulfilled. In 1843 a prize for Botany was awarded to Henry Fowler, and G. H. Philips and Truman Hooper took certificates. In 1844 a widely extended system of prizes seems to have been inaugurated, for we find competitions in four classes. Charles Cracknell took two, Chemistry and Materia Medica, John Williams took the prize for Practical Pharmacy, and John Horncastle that for Botany. This year we notice the names of Robert Howden and H. O. Huskisson among the certificated students. In 1845 B. H. Paul is the winner in Chemistry and G. F. Schacht takes second place; but there is now a division for "Organic Chemistry," and here we find the positions of these two competitors exactly reversed. G. F. Schacht also takes second place for Practical Pharmacy, and fourth for Materia Medica. In the first of these S. T. Baxter is the prize man, and for the second William Wilkinson is successful. John R. Rogers wins the Botanical Prize. In 1846 we find S. T. Baxter, J. C. Major, W. Wilkinson, and G. W. Shrubsole at the head of Chemistry, Organic Chemistry, Pharmacy, and Materia Medica respectively. A. Ailchin and the brothers Huskisson are perhaps the best known names among the other certificated competitors. In 1847 R. D. Grindley carries off two prizes, Chemistry and Pharmacy, J. S. Down secures that for Organic Chemistry, S. L. Ash for Materia Medica, and C. Woodward for Botany. Joseph Luce is certificated in Chemistry and Pharmacy, but, singularly enough, not in Botany; and T. Greenish appears once under Pharmacy. J. B. Edwards and W. Wilkinson are also among the honoured ones of this year. The contest of 1848 was a remarkable one. Chemistry and Pharmacy are now consolidated into one subject, and there are, therefore, three competitions. In each of these R. W. Giles reaches the second place, each time being beaten by a different opponent; and as a climax, it may be mentioned that neither of his conquerors appear in either of the other prize lists of the year. In this regard his performance, as they say on the turf, was really a great one. His victors were respectively J. S. Swann, W. Copney, and T. Task, while we find also in that year with honourable



mention the names of J. C. Braithwaite, J. Copeland, A. D. Pochin, R. S. Starkie, R. H. Harrison, and J. Walker. T. Trask wins the *Materia Medica* prize in 1849, E. Greaves and J. S. Walker taking the others. On this occasion we notice the names of Augustus Bird and G. Dymond. In 1850 the winners are W. Copney, J. Stocken, and J. Marshall, while C. Goode, and A. J. Caley are "placed" in each section. Next year, 1851, we come on a performance which, until then, was unprecedented, and was certainly most honourable. The first prize in each of the three sections was in that year taken by Richard Reynolds, and that his splendid victory was not by any means due to a weak field of competitors will be recognized at once when we mention that T. B. Groves was second to him in Chemistry and Pharmacy, his second in Botany, H. M. Witt also proving his "form" by carrying off the lecture prizes for the other two subjects in 1852. In this year R. Parkinson took the Laboratory Prizes in these two subjects, which were neither before nor since were so divided, and the same name appears second in Botany to T. Daines. In 1853 we find Botany and *Materia Medica* united; so for several years we shall have but two sections to deal with. In that year A. Harnett is credited with the prize for Chemistry, and H. Church and A. R. Dyer are bracketted for the Botanical Prize. In the next year we find the "prizes" changed into "medals," and John Attfield is recorded to have secured both. In 1855 the Chemistry Medal was awarded to J. H. Player, with Nathan Mercer, of Liverpool fame, second. Botany seems to have been at a low ebb that year, as "second prize" was the highest given. In 1856 Henry Booth secured both medals; and in 1857 E. C. C. Stanford performed a similar feat. Next year J. R. Thompson and J. J. Nicholson divide the medals; and in 1859 J. H. Baldock and T. Fleetwood are the honoured ones. In entering the last decade we feel that we are approaching modern times, and that many of the competitors of the class-room have scarcely had time to fulfil the promise of their youth. But some well-known names will be recognized among medallists. Frank Hooper took the Chemistry Medal in 1860, and was bracketted with T. H. Hall for the Botanical. T. J. Hasselby heads the Chemistry division in 1861, and F. H. Lescher is at the top of a remarkably long list of certificated students in Botany and *Materia Medica*. In 1862 W. A. Tilden and J. Whitfield divide the honours. In 1863 Michael Carteighe is another double victor, but from henceforth a third medal is added—namely, for Practical Chemistry, and this is handed to C. Umney, who also receives a certificate of honour in the other sections. 1864 is another remarkable year, John Watts rivalling the performance of R. Reynolds, by carrying off all three medals. F. R. Pasmore and J. Bingley are companions with Mr. Watts in each division. In 1865 A. R. Hall takes the Chemistry Medal, F. Oldfield and W. G. Selfe divide the chief honour in Botany, and A. Rose is the winner in Practical Chemistry. In 1866 the Chemistry winner of the previous year is successful for botany, J. J. Thom and R. Yates securing the two Chemistry Medals. In 1867 J. S. Battle carries off the prize for Practical Chemistry, while H. Woolley pockets the other two. John Moss follows in H. Woolley's footsteps in 1868, and W. Arkinstall is decorated for Practical Chemistry. In 1869 John Ingham almost repeats the brilliant performance of John Watts in 1864, but he only reaches second place for Botany, W. H. Smith being the medallist. The other two medals, however, are decreed to Mr. Ingham. 1870 is very similar to 1869, as C. Fryer secures the two Chemistry Medals and gets placed third for Botany, E. A. Webb taking the medal in this last. After this we have silver medals and

bronze medals in the different sections, as well as the certificates of honour and of merit, as before. A very curious coincidence has occurred in the competitions of the last two years. In 1871 H. Churehill took the Silver Medal for chemistry and also that for Botany, but attained only the Bronze Medal for Practical Chemistry. In 1872 R. H. Davies took exactly similar honours. The Practical Chemistry Silver Medal was won in 1871 by J. Hughes, and in 1872 by W. A. Shenstone.

Our limited space has compelled us to omit many names to which we should have been glad to have referred. But the purpose we had in view is fully served by the roll we have called over. We want our younger readers especially to notice how large a proportion of the most brilliant students have since become honourable and honoured in other positions. We want also to present a forcible argument against the erroneous idea which some people have that scientific study must necessarily blunt a man's business capacity. There are undoubtedly instances of the undue development of certain powers at the expense of others, but whoso would develop into a thorough "all-round" successful man, as pharmacist and as citizen, must ever remember the wise man's maxim, "Whatsoever thy hand findeth to do, do it with thy might."



#### THE BOOK OF HALL MARKS.\*

MR. LUTSCHAUNIG is the manager of the Liverpool Assay Office, and in the small work which he has just brought out we find a mass of most interesting and useful information, which only one thoroughly at home in his art could have accumulated. The subject concerns our readers but slightly and incidentally, and therefore we shall not find a great deal to say on the subject. But we believe ourselves justified in the assertion that the volume gives more solid information about gold and silver than any other of anything like its size in existence. Mr. Lutschaunig pays a well-deserved tribute to the memory of the old alchemists who, in seeking to decompose and construct the much-loved metal, discovered so much else. And he expresses his own belief that some day even yet this element, as we now regard it, will yield to chemical analysis. There are chapters on the assaying of gold and silver, and on other means of detecting fraud or impurities. The subject of "Hall Marks" is gone into very thoroughly, and Mr. Lutschaunig expresses his conviction that these are much more reliable than formerly. A series of well-executed engravings is given to show the various "Hall Marks" of Great Britain. The legal demands on the makers and sellers of gold and silver are explained, and other occasional matters are treated upon. We notice in particular an interesting chapter in which the question is replied to, as to what becomes of all our gold and silver. The author estimates that some thirty-five tons of silver and fifteen tons of gold are—well, not annihilated, but at any rate caused to vanish in this world every year. Photography is responsible for a great proportion of this, but the gradual-wearing money of our coinage counts for more than many people would imagine. Twenty thousand ounces of silver and thirty-seven thousand five hundred ounces of gold are reckoned to be thus dissipated. This is a very literal fulfilment of the Scripture, which speaks of riches taking to themselves wings and flying away.

#### THE YEAR BOOK OF PHARMACY.

WE received a copy of this important annual immediately after the publication of our last number, and long ere this, it has been more or less critically examined by a large

\* By Alfred Lutschaunig. London: John Camden Hotten.



number of our readers. We shall certainly express their opinions as well as our own when we describe this volume as a most creditable and permanent memorial of the high position which English pharmacy has attained. The editor, Mr. C. H. Wood, deserves the thanks of the whole body of pharmacists for the very thorough and painstaking manner in which he has finished his task, and it is but just, that we should remark on the comprehensive and lucid summary of pharmaceutical progress which he has presented in his introduction. It would be absurdly hypercritical if we were to pick out paragraphs here and there which we might think might have been omitted, or suggest others which might have been inserted in the various sections of the work. This we have no intention of doing; but one instance is so very flagrant, that it is forced on our notice. The very first paragraph of the introduction refers to Condurango (which, by the way, is spelt correctly there, but incorrectly elsewhere) as the most notable of the new remedies that have come into vogue during the past year. In other parts of the Year Book we find no less than nine distinct articles on this arrant impostor. It is true that we are also told that the result of its trial in Europe has led to disappointment, but that hardly reconciles us to the very prominent honour which has been paid to Dr. Bliss's very suspicious offspring. It is a melancholy fact, that that gentleman managed to secure in one big haul, half the governments and three-fourths of the medical profession of the civilized world, and he is probably well satisfied with the result. But the aforesaid fragments of the civilized world would be wise to drop the subject as quietly as might be. Having thus delivered ourselves of our burden against Condurango, we can only recur to our former expression of high respect for the Year Book of Pharmacy, which, while it avoids on the one hand a very ultra-scientific tone, is still, as it should be, free from any appearance of shoppiness. It is a valuable record of the year's pharmaceutical exploits, and the members of the conference may well be satisfied with such a result for the very slight payment which is asked for from them.

#### THE INTERNATIONAL SCIENTIFIC SERIES. \*

THESE two pioneers of Messrs. King's admirable enterprise have no other link of union except their succession in the series of which we have previously traced out the programme, and we may add in their thorough readableness. The idea of obtaining from the recognised chiefs in the various sections of scientific inquiry popular treatises on the subjects with which they are most familiar, is one for which the higher class of the reading public must be grateful; and if the succeeding volumes are as attractive in their style as the two now before us, we shall have a library of useful and entertaining knowledge in a more perfect sense than has ever yet been attained.

A study of some of the forms of water has been forced upon us during the past few months with such perpetual repetition as to ensure at least our familiarity with the phenomena, however ignorant we may have been of the causes. But it is one thing to study clouds and snow in the midst of London mud, and quite another thing to investigate them amid the Swiss mountains and with such an interpreter as Professor Tyndall. The scene of his book, if we may use the expression, is laid in Switzerland; and with that marvellous clearness of which he is such a complete master, he shows us how Nature performs her grand and mighty works in the construction of those glaciers and seas of ice which charm and awe the beholder. Dr. Tyndall's travels are no mere record of hotel bills and *compagnons de voyage*, with all the small talk of the *table d'hôte*. There is none of that in this volume. The company is far grander. And he is one of those rare teachers who, themselves standing among the highest as investigators, can present the knowledge they have attained in such manner, that the

most unlearned can comprehend it and delight in it. As one reads Dr. Tyndall's writings, one is constantly drawing in knowledge almost unconsciously, so clearly is each step deduced from the preceding one. For instance, at the commencement of this book, the formation of glaciers and icebergs is traced to its source. We are shown how the direct rays of the sun at the equator draw the aqueous vapour from the sea, how of necessity regular currents of winds carry the clouds thus formed to the poles, where a condensing process is gone through, and then we see at once how absurd is the very natural idea, that if the sun's power were less, the glaciers would be greater. We shall attempt no further to analyze or to criticize this work. It is in Dr. Tyndall's best style, and though it cannot be said to present anything new or startling to the scientific world, it does most certainly give to non-scientific readers fuller ideas of the grandeur and perfection of Nature's works. The second volume of this series, "Physics and Politics," by Mr. Walter Bagehot, is not at all like unto the first. It is an attempt to show how the human race emerged from savagedom to civilization, and the author seems to intend to fit facts to the Darwinian theories of evolution and natural selection. We see no objection to this assumption, especially as we see nothing novel in it. Everyone admits that the progress of the human race has been attended by a constant "struggle for existence," and when Darwin adopted that phrase to describe the evolutions of animal and vegetable, it was a tacit recognition of the fact that an analogous process might be traced in history. In other words he endeavoured to prove the analogy existing between the lower orders of creation with man himself, and from this to deduce or insinuate some rather unpleasant reflections. In the course of his essay, Mr. Bagehot suggests many interesting topics however, and puts forward some notions which are, to say the least, disputable. His book, however, gives the reader plenty to think about, and is written in an unaffected and unassuming style.

#### Literary Notes.

WE have received the calendar of the Pharmaceutical Society for 1873, which contains all the laws and regulations by which the various departments of labour of that Society are governed. It also contains the list of members, and reprints of many Acts of Parliament affecting chemists.

A Posological Table compiled by Dr. Handsel Griffiths, of Dublin, has been forwarded to us, and demands a few words of condemnation. We regret to have to make this remark, but we believe our readers will see that it is not undeserved.

It is described as a classification of the doses of all official substances, and is designed for students as an aid to memory, and for practitioners, apothecaries, and dispensers as a work of reference. We judge it from the second point of view. In the first place it is printed on a piece of thick cartridge paper, which is too stiff to stick to a wall and not stiff enough to hang like a card. Such a list would have been more useful (at any rate to practitioners) if it had been printed in a little book for the pocket. We need hardly say that there is nothing new in this table. Novelty in doses would be a dangerous and very questionable virtue. But what we complain of chiefly is that by his system of classification, the author has, at considerable trouble to himself, rendered his table almost useless as a chart of reference. For the compilers of the Pharmacopœia an alphabetical arrangement was good enough, and its simplicity was its great recommendation. Dr. Griffiths has destroyed this notion, and has classified official substances into divisions and subdivisions to a painful degree. Thus, to take the very first instance on the list, we find charcoal under the subdivision "metalloids," of the great division "inorganic substances." Who would think to look there for it? We might also complain that this classification is not perfectly correct. At any rate we find citric and tartaric and other acids among "inorganic" substances, which can hardly be

\* The International Scientific Series. Vol. I. The Forms of Water in Clouds and Rivers, Ice and Glaciers. By JOHN TYNDALL, LL.D., F.R.S. Vol. II. Physics and Politics. By WALTER BAGEHOT. London: Henry S. King and Co.



correct. If anyone else undertakes to compile a posological table, we should advise him to take the extra trouble to include the doses of substances which are not officinal. That would be a really useful work, and if simply arranged such a table would be valuable; but the one before us is a disappointment.

For our last issue we used more than two and a-half tons of paper, and spent £14 7s. 7d. in postage. We mention this circumstance, because we are certain it is an occurrence altogether unapproached in the chronicles of pharmaceutical literature either in this country or in any other.

We have received the first number of a new trade journal from New York called the *Druggist*, published by Messrs. Tilden and Co. It contains a leading article and several contributions on one of Messrs. Tilden's preparations, a few advertisements, and some clippings to fill up. There is plenty of room for improvement.

### ALUM IN BREAD.

DR. MUTER discusses this subject in the February number of the *Food Journal*. We reprint his article:—  
“Although this is a simple matter in the hands of those who have had real experience, yet even the best of us must admit that it is a process which, as now performed, is both very tedious and apt to be not over accurate. I am not aware that a set of directions is published anywhere but in Dr. Hassall's book and in Watts's Dictionary. I dismiss the former method at once, because most chemists will agree that dissolving the ash in nitro-hydrochloric acid, evaporating to dryness, boiling the residue (containing silica and phosphates) with caustic potash, and then filtering, neutralizing with acid and adding ammonia, is not a sufficiently secure method for the estimation of the minute quantities of alumina with which we have to deal. The process as given in Watts's Dictionary is very carefully considered, and, with experience, works well. It is as follows:—

“The bread taken for examination should be crumb from the middle of the loaf; it should be carefully trimmed from crust and outside crumb, as those portions may be dirty. It is then to be charred on a platinum tray; the charcoal reduced to powder and incinerated in a muffle; the ash digested in pure strong hydrochloric acid; the filtered solution evaporated to dryness to render silica insoluble; the dried residue drenched with strong hydrochloric acid, then boiled with water, and the liquid filtered. The acid filtrate must next be nearly neutralized with carbonate of sodium, pure alcoholic potash added in excess, which will precipitate earthy phosphates, and retain alumina in solution, and the liquid boiled and filtered; aqueous potash must not be used, as it always contains alumina. The alkaline filtrate is then to be slightly supersaturated with hydrochloric acid, and boiled with carbonate of ammonium; this will precipitate all the alumina, which may then be collected, washed, and dissolved in nitric acid, a piece of metallic tin added, and the liquid boiled: the tin is thereby oxidized, and remains as an insoluble powder, consisting of stannic oxide and phosphate, the whole of the phosphoric acid being thus separated from the alumina. The whole is next evaporated to dryness, the residue treated with water and filtered, and the alumina precipitated from the filtrate by carbonate of ammonia.”

“An analyst trying this process will find the following difficulties occasionally presenting themselves—(1.) If the temperature at which the bread has been ignited has exceeded a dull red, the alumina becomes so difficultly soluble as to now and then escape the action of the ordinary pure hydrochloric acid sold. (2.) If the residue after evaporation be not sufficiently heated for a time, the silica does not become entirely insoluble, and if on the other hand too long and too high heating be indulged in, the alumina once more becomes troublesome to dissolve by simply drenching with strong, and then boiling with dilute, acid. I have known students to fall into both these errors, and to consider a precipitate of silica to be alum, in flour into which I had put none, and sometimes to miss altogether the detection of as much as ten grains in a four-pound loaf. If

even carefully conducted, however, the time which the process takes, and the number of filtrations and washings (six), tend to render some alteration desirable. It struck me that if a system could be adopted, by which the phosphoric acid could be separated before precipitation of the alumina, it would be advantageous, and I accordingly turned my attention to a method, proposed some years ago for the separation of phosphoric acid and alumina, and given in ‘Crookes' Selected Method,’ and I found, that with proper manipulation, it gave excellent results. The process which I now generally employ is as follows:—

“One thousand grains taken from the centre of the loaf are first reduced to cinder, and then pounded and ignited in a muffle on a platinum tray, at a dull red heat, until the ash is as nearly white as possible. The ash is then to be boiled with strong hydrochloric acid, to which a few drops of nitric acid are to be added, if it does not seem to dissolve well, and the whole diluted and filtered. The filtered liquid is then evaporated to dryness on the water bath, and heated for about half-an-hour in the air bath to 270° F. The residue is exhausted by drenching with strong, and then boiling with dilute, HCl; and after partial neutralization with carbonate, an excess of pure caustic soda is added, and the liquid boiled and filtered.\* To the filtrate and concentrated washings, solution of chloride of barium is added, with great caution, and in the very slightest possible excess. Carbonate of soda is then added in just sufficient quantity to precipitate the excess of barium, and, lastly, some more caustic soda, and the whole is once more warmed and filtered. The filtrate and washings, which now contain the alumina, are then treated with a very slight excess of hydrochloric acid, concentrated and precipitated by adding ammonia in slight excess, and then boiling gently for some time till the odour disappears. The whole is then filtered, and the precipitate having been well washed with boiling water, is dried, ignited strongly, weighed, and multiplied by 246.988, which will give the quantity of alum per 4 lb. loaf.

“In a large number of experiments made on this system, the precipitate was quite free from phosphates, except in two or three cases, in which it showed a trace unestimable by the Molybdic method. A set of 1 lb. loaves were prepared by my baker, containing special quantities of alum as nearly as the operation of baking would permit him to calculate, and they gave the following results—their composition being, of course, unknown to my assistant who did the analysis:—

Calculated by baker to contain per 4 lb. loaf.				Found to contain.	
Set marked No. 1	..	No. alum	..	..	None.
.. 2	..	10 grs.	..	..	10.9 to 11.2
.. 3	..	40 grs.	..	..	39.9 to 39.1

“No. 2 set of loaves were all found to be a trifle too light when weighed, and No. 3 set were a little over the pound, so that I considered the process had worked very close to the truth.

“Another important question is the time after baking for which it is safe to keep the bread before analysis, and on this point I have come to the decided opinion that no analyst should consent to give a quantitative certificate about any loaf which does not reach him within at most six hours after baking, as the very same loaves, when kept twenty-four hours, give by the same process immensely increased results. The practice I would suggest in this matter is, that on the days fixed for examining bread, the inspectors should be instructed to commence work as soon as the shops open, and have all the samples at the laboratory before 11 a.m. The analyst should first cut the loaves in two, and, in presence of the inspector, weigh one half and seal it up for preservation and subsequent production in court. He should then proceed at once to weigh out two quantities of 1,000 grains each, so as to have a duplicate in case of accidents, and put them aside properly marked till he has time to commence them. Too much care cannot be exercised in the early weighing, not only of the sample to be analyzed, but of the portion to be kept for reference, as, in case of dispute, this will prove the amount of weight actually lost by keeping, and so avoid an apparent conflict of results, should the sealed portion be afterwards analyzed.”

\* The soda must be quite pure, and should always be checked by precipitating the quantity of solution used with ammonia, and the weight of such precipitate, if any, deducted from the final result.



## THE MONTH

WE want to be informed of everything that occurs interesting to chemists and druggists all over the world. We cannot undertake to insert all that is sent to us; but for such paragraphs as we do use we are willing to pay, if gentlemen sending us news will intimate that they desire it. Everything affecting chemists and druggists is of interest to us.

A "Chemist's and Druggist's Society" has been formed for Ireland. The first regular meeting was held in Dublin on January 6th.

A sad case of death from the use of nitrous oxide gas as a dental anæsthetic is reported from Exeter. A doctor was present during the operation, and no precaution was neglected.

The Professorship of Chemistry in the University of Calcutta has been conferred on Mr. A. Pedler, formerly a student at Bloomsbury-square.

By a decree M. Quatrefages, pharmacien, major of the First Class, Chevalier of the Legion of Honour, has been promoted to the rank of officer.

M. Hebert, head pharmacien of the Hôpital des Cliniques, has been named as Chevalier of the Legion of Honour.

The commission of the peace has been conferred on Mr. William Dawson Savage, of Brighton. It could not be conferred on a more useful citizen.

The honour of knighthood has been conferred by her Majesty on Mr. Cordy Burrows, Mayor of Brighton.

We may direct attention to an important announcement made by Professor Redwood, at the late evening meeting of the Pharmaceutical Society, respecting a supplement to the British Pharmacopœia, which it is proposed to publish.

Mr. E. B. Nicholson, B.A., Librarian of the Oxford Union Society, has been elected to the office of principal librarian of the London Institution, rendered vacant by the death of Mr. J. C. Brough.

The Chemists' Ball at Willis's Rooms on January 22nd was attended by about 340 visitors. Frederick Barron, Esq. (Barron, Squire, and Co.), presided at the supper table, and in a crisp, sparkling speech proposed "Success to the Chemists' Ball." The Rooms presented a most brilliant spectacle, and dancing was kept up with unflagging spirit till nearly daylight.

On the 10th instant the Attorney-General moved for leave to bring in a bill to consolidate and amend the law relating to juries. It will be remembered that we last year addressed the learned gentleman on the subject, and that consequently in his bill he introduced a clause freeing all registered chemists and druggists from jury service. He proposes to bring in a similar bill this session, and having set to work early we have little doubt he will succeed in getting his proposals, or at least some of them, adopted by Parliament.

The Fellows of the Chemical Society have started a Chemical Club, one of the objects of which is to promote the contribution and discussion of original papers to the society, and to encourage good fellowship amongst its members. The number of members is limited to fifty, and we hear that there are only a few vacancies remaining. The meetings of the club take place once a month, when the members dine together before adjourning to the evening meeting of the Chemical Society.

The chief subject of discussion at the meeting of the Pharmaceutical Council this month, was the admission of ladies to the Society. Mr. Sandford met them face to face, and proposed to refuse them flatly; but this was not carried. Mr. Williams, however, led a flank movement, proposing that their election should stand over till June next to await the decision of a new Council. A balance of opinion was secured, and the president gave his casting vote for the waiting policy. Various alterations in the bye-laws were agreed to, but the attempt to lower the two-guinea fee, for chemists to become members, to one guinea, and the suggestion of raising the fee for the Minor examination, were both unsuccessful.

The *Globe* of January 21 published an article commenting upon the replies which appeared in this journal and that of the Pharmaceutical Society to their first investigations into the "Charge for Drugs." The writer says, "A physician's or surgeon's fees follow a recognised tariff which all the world can understand. But who can fathom the mystery of a chemist's fee?"

The *Pall Mall Gazette* of January 21 contained an article on "The Pharmaceutical Monopoly," which, though it indicated very cloudy notions of the Pharmacy Act and its demands, came to a very just conclusion as to the recent action of the Pharmaceutical Council with regard to lady pharmacists. In effect it argued that the councillors might have fairly done what they could to limit competition when their Society was merely a private association, but that now, entrusted with powers and functions from the State, they must learn to exclude personal considerations in interpreting the Act of Parliament which it is their duty to administer.

### FATAL ACCIDENT TO A CHEMIST.

One of the oldest and most respected families in Hexham, Northumberland, has been thrown into a state of profound regret by the sudden and terrible death of Mr. Joseph W. H. Ridley, chemist, partner in the firm of Jones and Ridley, wholesale druggists, Newcastle-on-Tyne. Mr. Ridley travelled over the Yorkshire district, and while driving over the Yorkshire moors, in the neighbourhood of Lofthouse, in Cleveland, his horse ran away, and he was either pitched out of the trap, or in endeavouring to escape he was thrown with his head against a huge boulder which projected from the side of the road. He was found insensible, and never rallied. He died on December 7th, aged 38 years.

### OBITUARY.

The deaths are announced of the following chemists:—Mr. Fletcher, of Cheltenham; Mr. Waugh, of London; Mr. Fowler, of Bedale; Mr. Allen, of King's Lynn; Mr. Parker, of London; Mr. Reynolds, Hyson Green, Notts; also of Mr. Isaac Baker Brown, F.R.C.S. Few surgeons had a wider reputation both in Europe and America.

### FIRE.

The new and handsome premises lately erected by Messrs. Mays and Son, wholesale druggists, South Shields, have been completely destroyed by fire. The fire was discovered by a policeman at six o'clock in the morning, but it had already attained to such a height that it could not be extinguished until the place was completely gutted. It is presumed from the unusual hour at which the fire broke out that the place had been first robbed and afterwards fired by the thieves. Messrs. Mays and Son were only partially insured, and will be heavy losers by the unfortunate occurrence.

### THE ADULTERATION OF FOOD ACT.

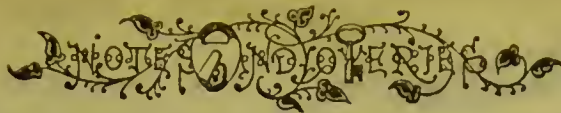
The following appointments have recently been made under this Act in the metropolitan district:—

Marylebone .. .. .	Dr. Whitmore.
Bethnal-green .. .. .	Dr. Jarvis.
Mile-end .. .. .	Dr. Corner.
Hackney .. .. .	Dr. Tripe.
St. Pancras .. .. .	Dr. Stevens.
Whitechapel .. .. .	Dr. Tidy.
Paddington .. .. .	Dr. Hardwick.
St. Olave's .. .. .	Dr. Vinen.
Wandsworth .. .. .	Dr. Muter.
St. George's, Hanover-square ..	The Officer of Health.
Poplar .. .. .	The Officer of Health.
City .. .. .	Dr. Letheby.
Camberwell .. .. .	Dr. Bernay.
St. Luke's .. .. .	Dr. Pavey.
Limehouse .. .. .	Dr. Rogers.
Lambeth and Southwark ..	Dr. Muter.
Appointment in Glasgow ..	Dr. Thorpe.

### HONOURS TO CHEMISTS.

Lecds, which is the birthplace of Joseph Priestly, and Birmingham, the scene of his labours, have taken the initiative in a movement to honour this great chemist. Mr. Williams, the sculptor, has been commissioned to prepare a statue. Subscriptions are being collected, and a goodly sum already contributed.





IN reply to a query in last month's issue as to the dose of nitro-picrate of sodium, we have received an answer that there is a nitro picrate of ammonium mentioned in the United States Dispensatory, of which the dose is  $\frac{1}{2}$  grain to 1 grain, prescribed in company with gallic acid and opium. The dose of the sodium salt, we should imagine, might safely be as strong as this.

W. 14 (Liverpool).—1 and 2. Blane's "Veterinary Art" (J. and A. Churchill, 1841). 3. Morton's "Veterinary Pharmacy" (Longman, Green, and Co.) You will also find some valuable papers on "Veterinary Medicine," by Mr. W. Hunting, M.R.C.V.S., in the vols. of the CHEMIST AND DRUGGIST for 1869 and 1870.

B. E.—We should thank Kelly's "Chemists' and Druggists' Directory" would answer your purpose. We know of no other list of the makers of the various articles for chemists' use.

A. P. (Sydney).—Thanks for your communication, which we are sorry we cannot use.

S. C.—For ourselves we think silver leaf the neatest in appearance and most satisfactory of application. You will find a paper on the subject in our January issue. See, also, remarks to Pharmacien.

T. G.—1. We believe that in one of his lectures at the Royal Institution, Professor Tyndall referred to a form of respirator which would prevent the inhaling of such fumes as you speak of. We have not, however, been able to find any account of a practical application of his suggestion.

C. J. K.—CORNER FOR STUDENTS.—Your application was disregarded because you sent us no name.

A. W. T. (New Jersey, U.S.)—The article on "Our Writing Fluids" first appeared in the CHEMIST AND DRUGGIST for June last. We are much obliged to you for speaking so well of our diary. The other matters in your letter have been attended to.

W. B. R.—1. "The Chemist and Druggists' Diary and Pharmaceutical Text Book" being especially designed to meet the everyday requirements of the pharmacist, will, we think, be found best suited for your purpose. 2. Thanks for your kind recommendation.

Chemicus.—The separation into layers of the Ext. Filicis owing to the materials employed in its preparation not having been anhydrous. The powdered root should be carefully dried over slaked lime, and exhausted by percolation with ether.

Critic.—We are greatly honoured by your voluminous communication; but, as we think we said to you before—or if not, we say it again, as the Irish paper remarked—we never have, and never will, sacrifice the interests of the great bulk of our subscribers to the crotchets of one or two. Did you ever read a story concerning a certain old man and an ass? If so, *verbum sat sapienti*.

R. D., jun.—You would be at liberty to carry on business as a manufacturing chemist, provided you did not, under cover of that title, either retail, dispense, or compound any of the substances described as poisonous by the Pharmacy Act.

J. T. B.—We believe the "Manuel du Fabricant de Boissons Gazeuses," (4s.) published by J. Hermann Lachapelle, Paris, would furnish all the information you require respecting the manufacture of mineral waters.

H. M.—1. We are afraid you accord to us a larger share of affection for the Chancellor than we actually possess. Doubtless the proposal you refer to was prompted by that spirit of generous dealing which always characterizes the relations of Bloomsbury-square with its country brethren. 2. The dream of a universal equality of prices is Utopian. Of course it would save a good many vexations, but it will never come to pass. You say your scheme only wants acuity; we quite agree with you, it is precisely what it does want.

Pharmacien.—1. For general laboratory work we recommend you Galloway's "Qualitative Analysis," and Sutton's "Handbook of Volumetric Analysis," both published by J. and A. Churchill. 2. You will find a detailed account of coating pills with sugar, &c., in the CHEMIST AND DRUGGIST for December, 1871. 3. Mohr's buretts are probably the best. You could obtain an Oertling's balance to turn with 1-50th of a grain, well adapted for analytical work, for about three guineas; more delicate ones range from three to twenty guineas. An advertisement in our "Exchange Column" might be useful. Thanks for your kind opinion.

J. T. B.—M. Weber recommends the following as a good formula for negative varnish:—

Take of Best yellow shellac,  $\frac{1}{2}$  lb.  
Alcohol, 1 lb.  
Resin,  
Venetian turpentine, of each,  $\frac{1}{4}$  oz.

Mix, and pass through coarse filter paper, adding a little more alcohol if necessary. Let it stand to clarify, and pour over the plate in the usual manner.

BLACK CANDLES.—It has long been an object sought after by the manufacturers of wax, stearine and paraffin candles to obtain a means of colouring them a jet black without interfering with the illuminating power. For funeral ceremonies, and on certain other occasions, there is a demand for black candles. This result can be attained by digesting with heat, the substance of which the candle is to be made, for a few minutes in a vessel in which has been placed some crushed anacardium nuts (*Anacardium orientale*). This fruit contains a sort of juice of an intense black colour which unites intimately with paraffin, &c., without in the least degree affecting the illuminating power.—Translated from the *Moniteur des Produits Chimiques*.

P. L. B.—1. The formula for a chemical barometer is as follows:—

R Nitrate of potassium,  
Chloride of ammonium, of each, 3ss.  
Camphor, 3ij.  
Rectified spirit, 3ij.

Put the mixture into a bottle about 10 inches in length and  $\frac{3}{4}$  inch in diameter, and cover the mouth with a piece of perforated bladder. If the weather promise to be fine, the insoluble matter will settle at the bottom of the tube, while the liquid remains pellucid; but previous to a change for rain, the compound will gradually rise, the fluid remaining transparent. Twenty-four hours before a storm or very high wind, the substance will be partly on the surface of the liquid, apparently in the form of a leaf; the fluid in such cases will be very turbid, and in a state resembling fermentation. 2. The 16th section of the Pharmacy Act makes a special exception as regards patent medicines. 3. If he is not registered under the Medical Act, it is not only contrary to etiquette, but decidedly illegal, to use the title M.D.

N. M. D.—REFINING OIL.—You would probably find Tbénard's process answer best. It consists in gradually adding one or two per cent. of sulphuric acid to the oil, previously heated to 100 deg., and well mixing by constant agitation. After the action of the acid is complete, which is known by the oil after twenty-four hours' rest, appearing as a clear liquid, holding flocculent matter in suspension, there is added to it a quantity of water heated to about 140 deg., equal to about two-thirds of the oil; this mixture is well agitated till it acquires a milky appearance. It is then allowed to settle, when after a few days the clarified oil will rise to the surface, while the flocculent matter will have fallen to the bottom of the acid liquid. The oil may then be drawn off, and, if required perfectly clear, should be filtered.

J. L.—1. Of course it would be the duty of the police to inquire into any case where an infringement of the law was suspected. The instance you refer to is a palpable evasion of the Poisoned Seed and Grain Act. We should think you might easily obtain a conviction, for, as you are doubtless aware, even the use of poisoned grain is an indictable offence liable to a penalty of £10. 2. Your rat-catcher stands a good chance of catching something more disagreeable than rats. If the other gentleman you refer to thinks it worth his while to supply packets of vermin killer, after labelling and registering each sale, at the extravagant price of one penny, we can only say that we wish we had some of his superfluous lime.

Beta.—The following is a good formula for Syrup of Phosphate of Iron and Lime:—

R Ferri Phosphat. gr. 96  
Calcis Phosphat. gr. 192  
Acid. Phosphoric (sp. gr. 1.5) ʒi.  
Aqua Distillata aa ʒi.  
Syrupi 3x.

Mix the powders with the water in a glass mortar, add the acid and filter into the Syrup.

Pharmacien.—1. We believe that, with the aid of one or two good textbooks, such as those of Galloway or Fresenius, you could make very considerable progress in both qualitative and quantitative analysis. And if you could occasionally spend an hour with a thorough practical analyst, we do not think you would find any difficulty in carrying out any ordinary investigation. 2. Bloxam's is an excellent text-book for experimental work, but would hardly be so well suited to your purpose as one of the others we have mentioned. You will find a good chapter on Urinary Analysis in Sutton's "Volumetric Analysis." A comprehensive treatise on the subject would be "Urinary Deposits, their Diagnosis, Pathology, and Therapeutical Indications," by Golding Bird, M.D., &c. J. and A. Churchill. 3. It would be impossible to indicate the probable cost of fitting up a laboratory, as the kind and quantity of apparatus required must be entirely regulated by the extent of the analysis you intend practising. For ordinary qualitative work £5 might cover the outlay, while for delicate quantitative investigations £100 would hardly be sufficient.





## A CURIOSITY OF SCIENTIFIC LITERATURE.

TO THE EDITOR OF THE "CHEMIST AND DRUGGIST."

SIR,—Your scientific contemporary, the *Chemical News*, has just made the discovery that "in nothing is the spirit of the age more clearly shown than in the efforts to utilize waste substances," and forthwith goes into ecstasies on "quite a recent instance of this improved economy," as illustrated by the utilization of suint, or the solid portion of the sweat of sheep, as a source of potash.

Now anybody in the least conversant with the progress of technical chemistry well knows that the endeavour to utilize suint is by no means a "recent instance" of the ingenuity of the age, but, on the contrary, is a fact recorded in most modern text-books.

With the article in question before me I turned up the account of the labours of MM. Maumené and Rogelet, as given in the Jury Report on Class II. Section A of the Exhibition of 1862, and found the following very remarkable concordance of thought pervading the two accounts: the one—that by Dr. Hoffmann—published in 1862, the other, the "quite recent" discovery of the *Chemical News*, in 1873:—

Jury Report, page 41—1862.

"It is well known that sheep draw from the land on which they graze a considerable quantity of potash, which, after circulating in their blood, is excreted from the skin with their sweat, in combination with which it is deposited in the wool. Chevreul pointed out that this peculiar compound, by the French called suint, forms no less than a third of the weight of raw merino wool, from which it may be readily dissolved out by simple immersion in cold water. In coarser wools it is less abundant; . . . on the average, about 15 per cent. of the weight of the raw fleece.

"This compound was formerly regarded as a soap, doubtless because wool contains, besides suint, a considerable proportion (about 8 per cent.) of greasy matter. This grease, however, is, in fact, combined with earthy matter, chiefly lime, as an insoluble soap. The soluble sudorate is . . . a neutral salt resulting from the combination of potash with a peculiar animal acid, of which little is known beyond the fact that it contains nitrogen.

"At . . . Rheims, Elbeuf, and Fourmies, the new industry of MM. Maumené and Rogelet is either established or in course of establishment. . . . An ordinary fleece weighing four kilogrammes, contains, according to MM. Maumené and Rogelet, about 600 grammes of sudorate of potassium, or suint. This should contain 33 per cent., or 198 grammes, of pure potash. Of this, they appear to reckon on about 173 grammes as being practically recoverable.

"The wool manufacturers of Rheims . . . Elbeuf . . . and Fourmies . . . wash annually 27,000,000 kilos, the produce of 6,750,000 sheep. From this quantity 1,167,750 kilos. of pure potash would, according to the above ratio, be recoverable. . . . at manufacturing centres it appears likely to be economically available."

*Chemical News*, Jan. 24, 1873.

"It has been ascertained that sheep derive from the soil on which they pasture a considerable amount of potash, which, after it has circulated in the blood, is excreted from the skin with the sweat, and remains generally in connection with this, attached to the wool.

"Chevreul discovered, some time ago, that this peculiar mixture, known by the French as suint, constitutes not less than one-third the weight of the raw merino fleece, from which it is easily removed by immersion in cold water. In ordinary wools the suint is less, the amount being about 15 per cent. of the raw fleece.

"Formerly, it was considered as a kind of soap, mainly for the reason that the wool, besides this, sometimes contains about 8 per cent., or a not inconsiderable quantity of fat. This fat, however, is usually combined with earthy matters, mostly with lime, and consequently forms a soap which is very insoluble.

"The soluble suint is a neutral salt arising from the combination of potash with a peculiar animal acid, of which little more is known than that it contains saltpetre (*sic*).

"Special effort has lately been directed to suint, . . . and a special industry has been established in . . . Rheims, Elbeuf, &c. . . .

As a general thing, it is maintained that a fleece weighing nine pounds contains about twenty ounces of suint, which should contain about one third part, or six or seven ounces, of potash, although not more than five and a-half ounces are perhaps directly available.

"In the wool manufactories of the towns just referred to there are nearly 60,000,000 pounds of wool washed annually, the yield of about 6,750,000 sheep. This quantity should contain over 3,000,000 pounds of pure potash. . . . Wherever the work is carried on by wholesale, as it is in connection with all great manufacturing establishments, it will undoubtedly become a regular part of manufacture."

Comment on the conduct of the editor of a scientific publication who does not hesitate to serve up such very cold hash to his readers is unnecessary.

I am, &c.  
Birmingham, Jan. 28, 1873.

EDWARD COLLENS.

## A WORD OF CAUTION.

TO THE EDITOR OF THE "CHEMIST AND DRUGGIST."

SIR,—We think it desirable to put chemists throughout the country on their guard, with respect to various wine and other agencies which are being hawked about. The following case has just come under our notice. A man called upon one of our customers, soliciting him to become an agent for one of these companies; he objected for some time, but was ultimately persuaded to undertake it. A paper was then produced for his signature, which he incautiously signed. Thinking next day he had not been sufficiently careful, he looked at the paper, a copy of which was left with him, and found that he had agreed to take about £100 worth of wine, and give a bill on receipt of the goods at four months. He wrote at once to the parties, cancelling the order, but they would not consent, and after some correspondence served a writ upon him. He placed the matter in the hands of a respectable solicitor, who eventually compromised it for £20. As this is not the first instance of the kind which has come to our knowledge, one case involving the man in ruin, we think a word of caution to chemists and others is not out of place, urging them not to sign any paper until they thoroughly understand the purport of it, and to what it renders them liable.

Yours obediently,

PRESTON &amp; SONS.

88, Leadenhall-street,  
15th January, 1873.

## THE SALE OF VERMIN KILLERS.

TO THE EDITOR OF THE "CHEMIST AND DRUGGIST."

SIR,—After reading the report of the trial of Mr. Crabb Gellet in last month's *CHEMIST AND DRUGGIST*, I got to musing over it, and asked myself the following questions. Who instructed the detective to catch Mr. Gellet breaking the Pharmacy Act? Was he aware before he had the packet analyzed that it contained strychnine? His son asked for Battle's Vermin Powder, not strychnine. How, then, could Mr. Gillet be summoned for selling what he was not supposed to know the packet contained, and fined before it was proved he knew it contained strychnine? Is it illegal or improper to sell one and a half grains of strychnine to one person even if it is registered? Has every preparation advertised for destroying vermin, and every packet of sheep dipping I sell to be registered? If I mix arsenic and soft soap, am I obliged to wrap it up and label it with my name and address, the word poison, and register it? If every chemist in future register the sale of vermin killers, will that prevent another hundred dogs from coming to grief?

Not being able to answer the above satisfactorily, I thought someone else might.

I am, yours, etc.,

Egremont.

PUZZLED.

MESSRS. BARNETT AND FOSTER have made a further improvement in the Codd's bottle, of which they are patentees. Our readers will remember that this excellent device for aerated water bottles, consists in providing a glass marble, which cannot get below the neck of the bottle, and which, when the gas-charged water is introduced, is kept close up to the mouth of the bottle by the pressure from below. Thus a great saving of time, labour, and expense is saved to the manufacturer, by the avoidance of corks and wire, while the consumer also finds it very advantageous to have simply to push the marble down, instead of the troublesome plan of uncorking in the usual manner. The new arrangement consists in this: that when the marble is pushed down, it falls into a cavity especially provided for it, and cannot, except at the will of the pourer, in any degree return to obstruct the passage of the water. By allowing an ingress of air too, it makes the flow of liquid from the bottle much more rapid, and this is a great consideration where rapid serving is desirable.





FOND OF LAW.

THE case of Powell v. Hingston, which was reported in *extenso* in last month's CHEMIST AND DRUGGIST, has again come before the public in consequence of the plaintiff moving for a new trial, on the ground of evidence of negligence; but the Court found that there was no ground for disturbing the verdict, as there was no evidence of negligence on the part of the chemist. They thought the plaintiff to blame for sending a child on such an errand. The bottle was properly labelled. The mistake was on the part of the plaintiff.

## THE VERMIN KILLER QUESTION.

Henson Moses, chemist, Snow-hill, Wolverhampton, was summoned at the instance of the Borough Coroner for unlawfully selling poisons (Battle's Vermin Killer) to Thomas Woodward, deceased, he not having been personally introduced to Mr. Moses, as required by the Act of Parliament. This case attracted much attention, from the fact that Mr. Moses at the time of the sale was not aware of the fact that an alteration had been made in the Act by the addition of vermin killers such as Battle's to the schedule of poisons. The deceased, Thomas Woodward, had purchased six pennyworth of Battle's Vermin Killer from Mr. Moses without any witness or entry of the sale, but labelled "poison." Woodward was found apparently in a fit; shortly afterwards he died. Mr. Moses pleaded "guilty," but under extenuating circumstances. He was fined 5s. and costs, being the first offence.

## SCIENTIFIC DEBAUCHERY.

John Davidson *alias* Dr. Kahn, John Denison, and Henry Romilly surrendered to their bail, at the Central Criminal Court, on the charge of having unlawfully published an obscene and indecent book. Davidson, who wore two medals, was stated to have been a non-commissioned officer in a Hussar regiment. Sergeant Ballantine, for the defendants, tried to get a conference between the Deputy Recorder and counsel on both sides, as the details of the case were unfit for publication. Mr. Besley, however, expressed his determination to proceed with the case. He proved that Davidson was the proprietor of the Anatomical Museum, in Tichborne-street, known as Dr. Kahn's Museum, and though passing himself off as Dr. Kahn, he had not the smallest connection with the medical profession, and that the real Dr. Kahn had left the country ten years ago. Denison took the money at the doors, whilst Romilly acted as secretary. 30,000 copies of a work called the "Philosophy of Marriage" had been disposed of in a year. They were all found guilty, and ordered to find sureties; Davidson and Denison in £500 and Romilly in £100, to appear to receive judgment when called upon, and to distribute no more copies of the book.

## SECOND CONVICTION IN SCOTLAND UNDER THE PHARMACY ACT, 1868.

On Saturday, January 25th, before Sheriff Murray, James Mathieson, Medical Hall, 109, South Portland-street, Glasgow, appeared on a charge of contravention of the "Pharmacy Act, 1868," in so far as he kept open shop for the sale and dispensing of poisons, he not being a properly qualified and registered man. He had been carrying on business under the name of the previous proprietor, and for some time maintained that he was not the owner. But this excuse was exploded, and then an attempt at compromise was made. Ultimately it seems to have been arranged between Mathieson and the law agent (not the local secretary) of the Pharmaceutical Society at Glasgow that the former should plead guilty, and in that case no report of the proceedings would be published. We have very much pleasure in upsetting that arrangement, and would advise

the officers of the Pharmaceutical Society to consult with us another time before they offer such terms to any offender against the law.

## EMBEZZLEMENT.

W. J. Blandford, traveller for Messrs. Saunders and Thomson, wholesale druggists, Stockton-on-Tees, was charged with embezzling £2 4s., which he had received on account of his employers. He pleaded guilty, and his employers strongly recommended him to mercy. He, however, was sentenced to three months' imprisonment.

## A LADY SWINDLER.

Miss Anderson, who is found to answer to many *aliases*, among which are Jean Marci Frutch, Miss M. A. Trevallian, Miss C. M. Tracey, The Hon. Mrs. Treherne, Mrs. French, and Mrs. Tulloch, was charged at the Weymouth Police-court, with being the bailee of a set of false teeth, set in gold, which she had converted to her own use. On her arrival at Weymouth, she liberally patronized various tradesmen—jewellers, chemists, and drapers. Amongst those honoured by her patronage was Mons. Leys, a dentist, to whom she gave an order for a set of false teeth fixed in the best gold; whilst she had a valuable set on approbation, both costing about twenty-five guineas. She pawned them for £1. She has already honoured by her presence the following towns:—Bath, Bedford, Brighton, Cheltenham, Derby, Exeter, Bournemouth, Scarborough, Nottingham, Devizes, and Leicester. She was remanded.

## SHARP ON THE PROFESSOR.

At the Town Hall, Leicester, on the 31st ult., a travelling herbalist, styling himself Professor John Boyes, was charged under the 42nd Act of Geo. III., c. 56, sec. 6, with selling without a licence a proprietary medicine not bearing the Government stamp. It appeared by the statement for the prosecution, which had been ordered by the Excise authorities, that the defendant had for the past thirty years travelled the country with a caravan vending specifics to cure all the ills humanity is heir to. On the 26th of November last, Charles Langley, an officer of Excise, went to the defendant's caravan, then standing in Humberston Gate, Leicester, and purchased two boxes of cough lozenges, for which he paid sixpence. The boxes were enclosed in a handbill setting forth that the lozenges were the result of a discovery by Professor and Madam Boyes, were stamped with public approbation, and were made by machinery on the most approved principles, and that none were genuine without being stamped with the initials of the proprietor, and that they could only be had of the inventors. Subsequently the officer again called on the defendant and asked him to produce his licence to sell such medicines, when the defendant said that he had no occasion for one, as when he was in Birmingham his case was considered by the Board of Excise, and they decided in his favour. Mr. Harby, who attended with the defendant, admitted that the case came within the limits of the Act, and hoped the Bench would inflict only a moderate penalty, but the defendant threatening to appeal, the magistrates immediately ordered him to pay the full penalty of £20. Mr. Harby on behalf of the defendant withdrew the threat; and on his offering an apology the Bench reconsidered their decision, and fined the defendant £10, but refused to recommend to the Board of Excise any further reduction of the penalty.

## ROBBERY BY A SERVANT.

At the Birmingham Police-court, on the 23rd December, Jane Tudor, a domestic servant, in the employ of Mr. Canning, druggist, of Kenion-street, Birmingham, was charged with stealing £32 16s., the property of her master, was summarily convicted, and sentenced to six months' imprisonment.

## POISONINGS.

A boy, only twelve years old, named Finchcliffe, was charged at the Old Bailey with administering to John Sowden, a quantity of white precipitate with intent to poison him. Mr. Sowden was the assistant-master of the East London Industrial School, and there appeared to be no doubt that the prisoner, in consequence of having been



flogged, entertained an angry feeling towards him. The lad made no secret of his intention, and had openly talked of it before the other boys; he induced one of them to buy some precipitate powder for rats, and when he obtained it he put it into a bottle of medicine which Mr. Sowden kept in the school, but fortunately he detected its presence in time to prevent injury. He was found guilty, and sentenced to be confined in a reformatory for three years.

#### CARBOLIC ACID.

A boy named John Winter was poisoned by drinking carbolic acid at the Central District Schools, Hanwell. Carbolic acid is used for cleaning out the wards, and one of the nurses placed a bottle containing several ounces of it in a cupboard where she kept her food. The deceased is supposed to have reached the cupboard with a chair, and to have drank some of the poison. He died in a few hours. About twelve months ago a child was poisoned in a similar manner.

#### POISONING AT A DISPENSARY.

An inquest was held at Nottingham on the body of a child named Elizabeth Ann Brown, aged eight years. The child had been attended for some weeks as an out-patient by Mr. Richard Johnson, surgeon at the dispensary. On Sunday, December 22nd, the father went to the dispensary for some medicine, when he received in mistake some opium and bismuth from Mr. Johnson, who mistook the child's father for some one else. When the mistake was discovered, Mr. Johnson sent at once to have it returned, but it was too late, the child had taken two table-spoonfuls of the medicine. An emetic was administered, the stomach-pump was used on the following day, the child somewhat recovered, but it thereafter became gradually worse till its death on Sunday morning, the 12th ult. Since then the mother of the child had gone to the dispensary and charged Mr. Johnson with having murdered her child, and requested a pecuniary recompense. Mr. Johnson refused to do anything in the matter; the mother stated her case before the disposing committee, who gave her 10s., accompanied with an expression of sorrow that the mistake should have occurred. In reply to an inquiry it was stated that the names of patients were not put on the bottles issued from the dispensary. A *post-mortem* examination was made by Mr. Thompson, surgeon, who gave an opinion that the medicine had nothing to do with the child's death; he found that death was produced by inflammation of the membranes of the brain. The coroner while directing the jury to find in accordance with this statement, expressed some very strong opinion of the matter. A verdict in accordance was given, with a reprimand both to Mr. Johnson and the mother for the part they had taken.

#### A PRACTICAL JOKE.

At the Bradford Borough Court, John Wright was charged with administering a poisonous drug to Annie Slater in a dramshop. Miss Slater went with a friend to have a friendly glass. She there met the prisoner, who invited her to "sup" with him. She at first modestly declined, but subsequently she blushed and then consented. She found it was "very funny beer." He explained that it was old beer; but as he had been seen to take a packet out of his pocket and put the contents into the glass, a policeman was called, and he was given into custody. Mr. Rimmington, analytical chemist, examined the ale and the powder, and found it was tartar emetic. The prisoner said it was jalap. Mr. Edmund Taylor, chemist, Eccleshall, said that the prisoner had called at his shop and asked to be supplied with six grains of tartar emetic for a vomit. He refused to sell him six grains, but ultimately let him have three grains, which he signed for. Evidence of the prisoner's respectability and previous good character having been given, the magistrates discharged him, believing that he had committed only an idle, disgusting freak.

#### DEATH FROM CHLORAL HYDRATE.

An inquest was held at Liverpool on February 5th on the body of John Richards, thirty-four years of age, a chemist, who carried on business at 41, Paradise-street. For the last six months the deceased had complained of his heart, and was in the habit of taking hydrate of chloral to make him sleep. He did not weigh it, but usually crushed a little dissolved in water. On Saturday night he took a dose, and between eleven and twelve o'clock he let his pipe fall from

his mouth as he was sitting in his chair. He became insensible, and when Dr. Marsh was called in he pronounced life extinct. The doctor was of opinion that death resulted from an overdose of hydrate of chloral, and the jury returned a verdict to that effect.

#### POISONED BY ARSENIC.

At Osber Town, Naas, Ireland, a young man, named Patrick Kelly, died from eating poisoned bread; and the lives of six other persons were for some time in imminent danger. The facts of the case were these:—His wife having to make some bread, went to a neighbour to borrow some carbonate of soda. A little girl, named Ellen Carroll, looking in the cupboard, found some white powder wrapped up in paper in a box. This was believed to be the required powder, and was used accordingly, with the sad result we have described. The powder turned out to have been arsenic. It had been bought for sheep-washing, and the remnant had been laid aside and forgotten. Mixture with soot or indigo would have prevented this accident; and as the Arsenic Act does not extend to Ireland, it was doubtless by oversight that the attention of the coroner's jury was not drawn to the fact.

### Trade Memoranda.

Mr. Thomas Dobinson has succeeded to the business of Mr. James Robinson, Bishop Auckland.

Mr. Charles Fryer (from J. Bell and Co., London) has purchased the business of Mr. F. Oldfield, 12, St. Nicholas-street, and 2, South-street, Scarborough.

A meeting of the creditors of John Waterson, chemist and druggist, Birmingham, was held on February 27th. The statement was—Liabilities £1,102 11s. 8d., assets £316 5s. 6d. It was resolved to wind up the estate in liquidation.

Mr. William Dickenson, of Queen's-gardens, Hyde-park, has retired from business, and is succeeded by Messrs. Foster and Beedzler, both of whom are pharmaceutical chemists, and have been formerly engaged in the establishments of Messrs. Savory and Moore.

A meeting of the creditors of James and Chapman, mineral water manufacturers, Summer-row, Birmingham, was held on the 27th ult. The statement showed liabilities £592 15s. 4d.; assets £358 8s. It was resolved that the affairs of the debtors be liquidated by arrangement, and that the trustee be authorized to sell the estate to Mr. J. S. James, of London, for a sum realizing for the creditors 5s. in the pound.

The Chloralum business has recently changed hands, and it is likely to commence the disinfecting campaign of the approaching season with no cessation of the energy with which Professor Gamgee and his associates carried it on for several years past. The manager of the company indignantly denies the accuracy of a report on chloralum which was published some time ago in a German publication, and was quoted in this journal, and he writes, "You failed to notice the counter-statement by a distinguished professor which subsequently appeared in the German periodical. This would have been only fair to all parties concerned." As a proof that the Germans generally appreciate the excellence of chloralum, we are informed that the company has entered into a contract for three years with a German house, who will take the immense quantity of 60,000 gallons of chloralum liquid, and 1500 tons of chloralum powder during the period named. We are also informed that the company has arranged with Mr. George Jennings, the well known sanitary engineer, as to the manufacture and sale of Brown's self-acting disinfecter. Models of this apparatus are to be fitted up in plumbers' shops all over the kingdom, and as they are only adapted for chloralum it is anticipated that this course will powerfully influence the demand for the article.



Messrs. Cadbury Brothers, of Birmingham, have issued a circular announcing a plan which, while it is perfectly comprehensible to the public, will save the trade from any danger of inconvenience and penalty under the Adulteration Act. They say:—"Since the passing of the new Adulteration Act, we have seriously considered the importance of clearly stating what articles are pure and what are mixed. We have therefore placed them under two distinct heads—namely, cocoa and chocolate. Those we call cocoa are guaranteed to be manufactured of pure cocoa, without admixture; and those under the head of chocolate are mixed more or less with other wholesome ingredients. There will therefore be no further need of description or labels attached to the end of packets, where there is an admixture which contradicts the correctness of the name "cocoa" printed on the face of the packets.

The Litre Bottle Wine Company have recently opened the following depôts for the supply of their wines in litre bottles:—Mandley, Teignmouth; Evans, Moretonhampstead; Down, Ashburton; Bickford, Totnes; Chaplin, Brighton; Toulmin, Liverpool; Tirrell, Hanley; Mason, Bexley Heath; Taploy, Woolwich; Cripps, Hammersmith; Palmer, Acton; Mustard, Ealing; Caton, West Brompton; Sykes, Shepherd's Bush; Cooper Brothers, Kensington; Heritage, Warwick; Humble, Middlesborough; Aldworth, Bayswater; Ashbridge, North Shields; Harrison, Sunderland; Elliott, Droitwich; Dolman, Dudley; Merry, Lichfield; Ganderton, Stafford; Thorp, Stockton; Burgess, Wandsworth; Cooper and Co., Hackney; Murphy, Lower Clapton; Webb, Scarborough; Marsh, Upper Norwood; Snowden, Wellington; Wilde, Ironbridge; Burton, Bridgnorth.



## BANKRUPTS.

GLOVER, W. M., druggist and drysalter, Middlesborough.  
HAMPSON, J. D. C., surgeon dentist, 19, Clifton-road East, Marylebone.

## BANKRUPTCIES ANNULLED.

CUTHBERTSON, J., FORSTER, F. J., and MAWSON, W., trading as the Forth Bottle Company, Newcastle-on-Tyne.  
HONEYWILL, T. W. Q., medical student, 43, Princes-street, Rotherhithe.

## ARRANGEMENTS OR COMPOSITIONS.

AKHURST, W. E., soda water manufacturer, Doocorn-buildings, King Henry's-walk, and 15, Balls Pond-road, previously chemist, 8, Lambs Conduit-street.  
BEECHY, F. M. C., surgeon, Kempston.  
BLANCHARD, T., chemist and druggist, Trowbridge.  
BUTLIN, SARAH, chemist, 2, Lower Seymour-street, and 20, Duke-street, Manchester-square, London.  
CARY, O. R., chemist and druggist, 145, Great Alfred-street South, Nottingham.  
COOPER, G. C., surgeon, Brownhills; formerly surgeon and chemist and druggist, Birmingham.  
FURLONG, COUSINS, and Co., manufacturing chemists, Holywell, Flintshire.  
GRACE, F., veterinary surgeon, Oxford.  
HITCHINS, C. V., surgeon, Weston-super-Mare.  
KERR, D., surgeon, Wednesbury.  
KNOWLES, H., physician and surgeon, 2, Lisson street, Marylebone.  
LINFORD, J. S., trading as Bolton and Co., operative chemist, 146, Holborn-bars, London.  
RUSSELL, S., chemical manufacturer, Lydbrook, West Dean.  
RYLEY, H., surgeon, Fulbourne, Cambridge.  
SOWTER, G., chemist, 13, Charterhouse-square, London; late of Blackheath.  
SPRAOUR, C., surgeon, Kimbolton.  
WOOD, W., soda-water manufacturer, Nottingham.

## PARTNERSHIPS DISSOLVED.

BRIERLEY, J. B. and C. E., chemists, druggists, and wine and spirit dealers, Halifax; debts by J. B. Brierley.  
DAVIS and TAYLOR SMITH, surgeons, Sunderland.  
FAIRHURST, KAY, DUTTON, and CRAIG, druggists, Warrington; debts by J. Craig.  
GIBSON and SON, chemists, Hexham, Northumberland; debts by J. P. Gibson.  
OAKLEY, JOHN, and SONS, emery, etc. manufacturers, 172, Blackfriars-road, London; debts by John Oakley, sen., and John Oakley, jun.

REDFERN and SUNDERLAND, manufacturing chemists, Upper Wilsam, Yorkshire.  
ROBOTHAM and BIDDLE, chemists, druggists, and pattern manufacturers, Birmingham; debts by G. H. Robotham.  
SANKEY and WILKIN, surgeons, Maidstone.  
SMITH BROS. and Co., tar distillers, West Ham, Essex, and 101, Leadenhall-street, London.  
SWINBORNE, WALLINGTON, and Co., isinglass manufacturers, Coggeshall, Essex, and 145, Upper Thames-street, London; as regards R. A. Wallington.  
TAYLOR, D. and SON, surgeons, Kennington-park, London.  
WOOD, W. and Co., manufacturing chemists, Leeds; debts by W. Wood.



REVISED TERMS.—Announcements are inserted in this column at the rate of one halfpenny per word, on condition that name and address are added. Name and address to be paid for. Price in figures counts as one word.

If name and address are not included, one penny per word must be paid. A number will then be attached to the advertisement by the publisher of the CHEMIST AND DRUGGIST, and all correspondence relating to it must be addressed to "The Publisher of the CHEMIST AND DRUGGIST, Colonial Buildings, Cannon-street, London, E.C.," the envelope to be endorsed also with the number. The publisher will transmit the correspondence to the advertiser, and with that his share in the transaction will cease.

## FOR DISPOSAL.

A capital Printing Press and Apparatus, in exchange. Wyles, Bourn.  
Garrod's "Materia Medica," 3rd edition; quite new. 8s. 25/74.  
Heath's "Dissector," new, uncut; 9s. W. S., Medical School, Sheffield.  
Halse's Galvanic Machine, nearly new, 6 guineas. March, Long Buckby, Rugby.  
The "Handbook of Farriery," by a Chemist and Druggist, post free, 2s. 6d. Joce, Bideford.  
Quantity G. Opii. Opt. Sample 1 lb. for P. O. O. value 23s. F. J. Brett, Downham, Norfolk.  
Water Cushion (large), by Hooper. Apply to Durroch, Maze-pond, Borough, London.  
Statham's Electric Machine, No. 2; never used; 30s Charles Ocock, Dulverton, Somerset.  
Smith's smaller "Latin-English Dictionary," good condition, cost 7s. 6d.; price 5s. 35/74.  
Conjuring Tricks for Chemical Apparatus or Cash. Pepy's Gas-holder, Airpump, &c. 42/74.  
Eight 3½-gallon pear-shaped Globes, with spiral stoppers. Cash offer wanted. Address Pooley, Chemist, Bath.  
An excellent extra-rapid Carte Lens, by Squire, perfect order, with Diaphragms; cost £7 7s. Offers wanted. 44/74.  
Nine dozen Seidlitz Boxes, green, plain lift-off lids. Offers wanted. Hutchinson, Chemist, Leith.  
Quinine, 1 oz., 7s. 6d.; Potass. Iodidi. 12 oz., 10s. 6d.; 10 lbs. Elect. Opium, 24s. per lb. For cash. 71/74.  
A large quantity Drugs and Patent Medicines. Stamp for List. L. R., 309, New North-road, Islington.  
Isinglass, ¼ cwt., pickings suitable for brewers' finings. Sample lb. 2s. 6d. Burdon, Bury St. Edmunds.  
2½ lbs. Extract Belladonna, Alcoholic. Recent. Offer wanted. R. H. Aspinall, chemist, 1, Leese-street, Liverpool.  
"Pharmaceutical Journal" for 1872; unbound. Offers wanted. "Jep." 33, Bridge-street, Warrington.  
Eight dozen ½-pint Condyl's crimson fluid; six dozen ½-pint Condyl's green fluid; two dozen pint green. Hickman, Bridgewater.



- "Cæsar," with key, in good condition; cost 7s. 6d., will take 3s. 9d. G. Moon, Wrangham and Hardy, Chemists, Malton.
- On Sale, the "Pharmaceutical Journal" from the commencement. Address, "Sigma," Post-office, Pendleton, Manchester.
- Nineteen Abernethy's Corn and Bunion Plasters, 1s. Boxes, clean and new, 6s. 6d. Walter Stead, Chemist, Heckmondwike.
- Fifteen Forceps (Key), 7 Stopping Instruments, without case, in good condition. Price 30s. Price, Chemist, Birmingham.
- Five Grain Pill Machine, for 24 pills, good condition, in exchange for Three Grain Machine. Neve, Chemist, St. Leonard's.
- Soda Water Machine, 'a bargain, by Sampson Barnett, No. 4, in good working condition. Offers wanted. Dalwood, Chemist, Sherborne, Dorset.
- Superior Black-polished Flat Glass Case, 6 ft. 3 in. by 3 ft. 6 in., on six legs, lined with blue. Lowest price £4. Taylor, 20, Cross-lane, Salford.
- A Syrup Ice Cream Apparatus, Copper Cylinders, &c. No reasonable offer refused. Would exchange for a small Soda Water Machine. 60/74
- Royle's "Materia Medica," Bentley's "Botany," last editions, in perfect condition, never been used. What offers? Apply to X., 55, Westgate, Wakefield.
- Southall's Materia Medica Cabinet, good as new, 19s., or highest offer; cost 25s. Seven Butler's Brande's Enamel (1s.), 3s. J. Bradley, chemist, Porter-street, Hull.
- Sixteen dozen 1s. 1½d. Mohr's Turkish Galvano-Magnetic Silver Anodyne; 3 dozen Goulding's Plant Food, 1s. canisters; offers wanted. Foster, Scarborough.
- Carr's Patent Levigator Mill, or Pestle and Mortar Super-seeder, cost £14. To be seen at Evans and Sons, Hanover-street, Liverpool. A very great bargain. 27/74.
- Three and a-quarter lbs. Decoe. Aloes Comp. Conc., 7s. 6d.; half lb. Essence Red Currant, 1s. 6d.; half lb. Essence Strawberry, 1s. 6d. 57/74.
- Nitrous Oxide Apparatus for sale, by Sprague, consisting of gasometer, retort, wash bottles, &c., all complete, only £4 15s., a bargain. Apply B., 151, Hoxton-street, N.
- Two Glass Cases, as Maw's, fig. 39, 15s.; Muspratt's "Chemistry," 38s.; Aitken's "Theory and Practice of Medicine," 2 vols., 15s. Fortune, Anstruther.
- Fowne's "Chemistry," 8th edition, nearly new, 8s. 6d.; Beasley's "Druggists' Receipts," 3s. 6d.; Lescher's "Elements of Pharmacy," 5s. Garstang, Park-road, Blackburn.
- A complete set of Forceps (Cleadow's), in morocco case, equal to new; Gas Stove, with piping; ¾ lb. of Ol. Cinnamonomi Folis. Address, J. G., 14, Netherthorpe-street, Sheffield.
- Kay-Shuttleworth's "Chemistry," cost 4s. 6d. (new) 3s. 3d.; Latin Grammar, 1s.; Blow-pipe, 9d.; in exchange Beasley's "Book of Prescriptions." Lea, Steer's, Chemist, Maidstone.
- Binocular Microscope, first-class, quite new, with Polariscope, and other apparatus, in handsome polished mahogany cabinet. Only £10 10s. Apply B., 151, Hoxton-street, N., London.
- New Air Bed, cost 70s.; 3 dozen 6d. Inks; 10 dozen 1s. Marking Ink; lot of Day and Martin's Blacking; Goulding's "Plant Food." For offers. Lists exchanged. Wyles, Bourn.
- Quantity of Drugs, Chemicals, Paints, Colours, Drysaltery, Plasters, Isinglass, &c.; two Specie Jars, Salt Prunell Mould. Apply, A. Dale, Bridge-street, Leeds. Send stamp for list.
- Taylor's Condition Balls and other Preparations—an opening order—in condition at half invoice price. L'Affecteur's Rob., 10 large, 19 small bottles, all clean. 22s. 6d. the lot. Kemp, chemist, Horncastle.
- "Pharmaceutical Journal," vols. 1 to 18 inclusive, half bound. Pereira's "Materia Medica," 2 vols., cloth. Thomas's "Practice of Medicine," 2 vols., cloth. Fownes' "Chemistry," cloth. Searby, Norwich.
- Rhind's "Vegetable Kingdom," 23 1s. numbers for 16s.; Squire's "Pharmacopœia," 5s., for 3s. 6d.; "Chemists' and Druggists' Diary," 2s., for 1s. 8d., all clean and new. Edwin Charles Sayer, 16, Brook-street, Ipswich.
- Galvanic Battery (Richardson's), with dial, 6 cells Zinc and Platinum, cost £10 10s., £3 15s. "Cæsar," 1s. 3d.; "Pharmaceutical Journals," 1871—1872. Offers wanted. "Chemicus," Harbour-street, Folkestone.
- A Mahogany Upright Case, two doors, thirty moveable shelves, 37 in. long, 28 in. high; also a tier of deal shelves, painted mahogany, 27 in. long, useful for window or counter—cheap. Apply, S. Parker, 360, Leeds-road, Bradford.
- Apparatus for manufacturing Nitrous Oxide Gas, 40-gallon Gasometer and Inhaling Apparatus combined; good as new; cost complete 13½l., price 6½l. 10s. Cigar Case, Maw's Catalogue, 53a, five compartments, 22s. 6d. 67/74.
- "A System of Surgery," by Samuel D. Gross, M.D., two handsome vols. of 1,000 pages each, and illustrated with above 1,200 engravings. Equal to new. Published in 1862. One guinea for the two volumes. Greenwood, Louth.
- Three cwt. of Ochre, in casks, free, 10s. the lot; two gallons of very fine French Oil Varnish, transparent, for oil painting and delicate wood; quantity Aniline Dyes, cheap; 20s. worth of Drugs for 10s. List sent. Address Chemicus, 15, Scotland-street, Sheffield.
- 14 Four and Six Gallon Window Carboys, cut glass stoppers; 4 Gallon Upright, ditto; 19 Gallon Stone Bottles, gold labels, equal to new; assortment of Dispensing and Lozenge Bottles, best quality, from Squire's, Oxford-street. Donston, High-cross, Tottenham.
- Four 2s. 9d. Locock's Wafers, 8s.; Four 2s. 9d. Blair's Pills, 8s.; Two 2s. 9d. Frampton's Pills, 4s., all clean and saleable; and Sixteen Patents 1s. 1½d., 9s. 4d., or the lot for 28s. Pill Machine, to cut 12, 8s. 6d. Andrews, Chemist, Eastbourne.
- Dried and Preserved Specimens of Belladonna, Hyoseyamus, Conium, Stramonium, Aconite, Digitalis, 5s. A surplus quantity of Drugs, cheap. Milton's Curative Appliance for Spermatorrhœa, 4s. Four volumes "Chemist and Druggist," unbound. Offers. "Chemicus," 12, Tonsley-hill, Wandsworth, S.W.
- Sets of eight Forceps, in Morocco Pouches, of good quality, at 20s. and 25s. each; a set of eleven double-jointed cheap Gas Stoves; Vulcanizer; Revolver, six-chambered; improved principle, in case, 30s.; pair handsome Counter Scales, cost 35s., for 18s. Address J. G., 14, Netherthorpe-street, Sheffield.
- For sale, in good condition, two 2s. 9d. and two 1s. 1½d. Hall's Lung Restorer, 5s. 6d.; one 1s. 1½d. Woodcock's Infants' Mixture, 9d.; one 4s. 6d. Crosby's Cough Elixir, 3s.; two 2s. Russell's Livixene, 2s. 7d.; two 2s. 9d. Russell's Kalonica, 4s. Stamped envelope for reply. K. Daykin, Ripley, Derbyshire.
- "Pharmaceutical Journal," 28 vols., 1841 to 1869; £3 nett., cost 12 guineas. N.B.—Another lot of 23 volumes for 30s., from 1841 to 1865, complete, with the exception of six numbers and volumes 6 and 11; also odd volumes or numbers on sale cheap. S. Richards, 30, Lower King-street, Deansgate, Manchester.
- Capital new half-plate Lens, fitted with diaphragms, only been used about two months; would take £2, or exchange for books on practical chemistry. History of Franco-Prussian war, in seven divisions, beautiful plates, in perfect condition; take 28s., carriage paid. R. F. Dickie, St. George's, Wellington, Salop.
- A nest of 80 Drawers, 56 in. x 58 in.; mahogany fronts, 6 in. x 4½ in. and 8 in. x 5½ in., 42s. Job lot of Dispensing Bottles, 16 dozen 12 oz. at 10s. per gross; 7 dozen 16 oz. at 14s.; 3 dozen 20 oz. at 18s.; separately, or the lot for 24s.; also 4, 6, and 8 oz. do. at 8s. per gross. Andrews, chemist, Eastbourne.



Two large handsome Specic Jars; may be seen in window. Offers wanted. Threc Elliman's Universal Embrocation; three Northway's Kill-pain; two Daffy's Elixir; three Balmoderma; two Lamplough's Lime Juice Syrup; five Stone's Furniture Cream. Half selling price. Hetherington, Cornwall-street, Plymouth.

Muspratt's "Chemistry," complete, 2 vols., bound, morocco gilt, cost £4 10s., lowest price 42s.; Parke's "Chemical Catechism," 5s. 6d.; "British Pharmacopœia," 1864, 2s. 6d.; "Supplement to the Pharmacopœias," by Rennie, 2s. 9d.; "Hot Air Bath for Rheumatism," 5s. 6d. Jones, 4, Harbour-street, Folkestone.

Bumstead on "Venereal Disease," 10s. 6d., published at 24s.; Parker on "Syphilis," 3rd edition, 4s., 4th edition, 5s.; Hooper's "Physicans' Vade Mecum," 4s.; "British Pharmacopœia," 1864, 3s.; Pereira's "Materia Medica," 12s., published at 21s. Bradley, 33, Bond-street, Brighton.

Smedley's Ascending Douche, £2 5s. Nest of drawers, two rows, Treble's, mahogany fronts, 12ft. by 13½ in., not labelled, £2 15s. Three 112 lb. store Tea Canisters, Gilbert's make, first quality, £4. Provision Scale, Avery's Agate bearings, to weigh 14 lb., £2 15s. Set of Porcelain Weights, 4 lb. down, 12s. Three Papier Mache Show Bowls, 15s. Three Japanned Show Bowls, 28s. Brass Scoop, 4s. 6d. No. 9 Iron Mortar and Pestle, 6s. 6d. All the above equal to new. S. Smith, New Swindon.

#### WANTED.

Shop Counter, about 4 ft. long. Dolman, Cheltenham.

Cooley's "Cyclopædia." Severs and Bateson, Chemists, Kendal.

Dow's Clark's Ice Soda Water Apparatus; lowest price. Lea, Folkestone.

Drawers to fill a space 8 ft. long by 3 ft. 6 in. high. W. A. Wood, Hunslet.

Cooley's Cyclopædia of Receipts. Address, J. G., 14, Netherthorpe-street, Sheffield.

Mohr and Redwood's Practical Pharmacy. J. Rayson, Swineshead, Spalding.

Tyler Smith's "Midwifery," last edition. Price to Durroch, Maze-pond, Borough, London.

Materia Medica Cabinet, good condition, cheap. Charles Horton, 6, Montague-street, Worthing.

Second-hand Surgical Instruments (Modern). Particulars and price to Durroch, Maze-pond, Borough, London.

Beasley's "Druggist Receipt Book;" Beasley's "Prescriptions;" Quart Glass Percolator, with Tap. 47/74.

4 Four to Six Gallon Show Carboys, not higher than 33 inches. B., Waddington, Thornton, near Bradford.

Prescriber's Pharmacopœia Calendar, Pharmaceutical Society, 1873. Mr. Solomon, M.P.S., Rowley-park, Stafford.

Attfield's "Chemistry," fourth Edition; Bentley's "Botany;" Royle's and Headland's "Materia Medica." A. Brooks, 121, Netherfield-road North, Liverpool.

Mahogany Glass Case, 4 feet long, about 3 feet high, in good condition. Send full particulars. K. Daykin, Ripley, Derbyshire.

A Nest of Chemist's Drawers, in good condition, 6 or 8 feet long. State particulars and price to H. F. C., 143, Gerard-street, Derby.

Attfield's "Chemistry," 4th edition; Bentley's "Botany;" Royle and Headland's "Materia Medica." A. Brooks, 121, Netherfield-road, Liverpool.

Latin Edition of "London Pharmacopœia," Translation of ditto, Thompson's Conspectus of ditto; Hooper's Dictionary; state price of any or all. H. Stephens, Stone.

Glass Cases in good condition; one style as Maw's fig. 40, 54 or 60 in. long, one as fig. 18, one as fig. 7 or 8; and Shop Lamp and Bracket in good condition; describe and state price to M. P. S., Hednesford, Stafford.

## Varia.

We learn from the *Jamaica Gazette* that the cultivation of cinchona, senna, and jalap, has been commenced in that island with fair promise of success.

A NEW MODE OF ADMINISTERING COPAIBA.—Dr. Wehner, of Pennsylvania, has obtained in chronic cases of gonorrhœa, excellent results from copaiba without any of its nauseating inconveniences by administering the drug combined with opium in the form of rectal suppositories. He recommends the following formulæ:—Copaiba, six ounces; opium powder, five grains; oil of theobroma, and spermaceti, of each an ounce and a half; from forty to sixty grains of white wax, for twelve suppositories; one to be introduced morning and night.—*Lancet*.

NATIVE GUANO.—The Metropolitan Board of Works has given a fair and sufficient trial to the system of sewage removal carried on by the Native Guano Company (the A B C process), and has decided that it is unsatisfactory, and cannot be adopted with profit to the ratepayers. Reports of the process were submitted by Mr. Bazalgette, the chief engineer, and Mr. Keates, the consulting chemist to the Board. Taking these together, we find that the A B C process was found to purify the sewage-contaminated water so far that, in Mr. Keates's opinion, the effluent water was pure enough to be admitted into any ordinary river, without producing a dangerous degree of pollution. Mr. Keates, however, adds that the sewage was so extremely dilute as to render the results somewhat inconclusive. One other point in favour of the process is, that in the preparation of the manure no offensive effluvia is emitted. It is just at this important point, however, that the process breaks down. According to Mr. Bazalgette, the manure costs per ton the sum of £6 6s. 4d., reckoning no rent, interest on capital, nor depreciation of plant. According to Mr. Keates, the chemical value of the manure is 20s. per ton; while, according to the books of the Company, only a few shillings have been received for sales. It is over two years since that we recorded experiments of our own with this Native Guano, which led us to the same conclusion as the Metropolitan Board of Works has arrived at after a year's very elaborate investigation. The sewage problem still remains open, and it is hardly possible to imagine any scientific work which could have more value to the community than this.

AN OPIUM-SMOKING DEN IN SHANGHAI.—The labours of the day are over, crowds of people are hurrying along the streets, and some of them turn in here in order to satisfy undisturbed their depraved appetites. It is nine o'clock, and the infatuated smokers are in various stages of excitement or depression; some are entering distracted with indescribable headache, or torn with racking nausea, hastening for relief and to minister to the ghastly craving they have been compelled to subdue during the labours of the day; others are temporarily gay under the stimulating influence of a pipe or two, while languid wretches—too intoxicated to regard passing events, and whose idiotic smiles show that they are quickly subsiding into their desired drunken oblivion—sprawl upon the couches. In a dark corner crouches Ya-pcen-Kwan, a blear-eyed scoundrel, eagerly watching for fresh victims, like a bloated spider hungry for giddy flies. He is an opium smoker himself, though as yet his interest has compelled the limitation of his indulgence. But in another year or two, when his son shall have reached a trustworthy age and been put into the management of the baleful occupation, the parent will abandon all restraint, and a few years more will see the once strong ruffian a drivelling, debilitated skeleton. In the rear of the opium shop is a wretched shed abutting on, or projecting over, one of the noisome canals which abound here. Into this morgue the senseless smokers are carried to sleep off the poison, if, happily, the possession of valuables do not tempt the opium dealer or his satellites to the commission of an irretrievable crime. The Government of India has pocketed, during a period of ten years, nearly seventy-six millions of pounds sterling from the sale of a poison at once the most alluring and destructive, as an indulgence, with which fallen humanity has been cursed.—*Food Journal*.





**T**HERE is scarcely any branch of commerce which will not be more or less directly affected by the present tremendous price of coals. Certainly the chemical trade must be one of the first to vibrate in harmony with the chord which the coal-owners have struck. The present crisis can hardly last long; but we trust its occurrence will have been sufficiently alarming to have induced scientific and practical men to turn their attention in earnest to the consideration of the means of saving our coals in many respects, and, where possible, of discovering substitutes. The interesting inventions in connection with gas manufacture which have recently been brought out are evidently steps towards this very desirable consummation. Another application of petroleum as a means of generating steam remains to be discovered, unless, indeed, some better motive power can be introduced. These inventions secured, we could afford to waste fuel as we always have done in our kitchens and parlours.

The chemical market is particularly firm. With the single exception of saltpetre, which is rather unsteady, we believe every product may be said to have strengthened its position since we last wrote. Manufacturers seem very sanguine that high prices will rule throughout the year, and the steady and increasing demand for British chemicals, especially from America, encourages them in this opinion. On the other hand, buyers seem to have the impression that a short period of tightness in the money market would be sufficient to bring down the prices of several staples. This difference of opinion naturally checks speculation, but the trade is none the worse for this. We believe that, from the sellers' point of view at any rate, business in chemicals was never in a sounder or more flourishing condition.

The sensational downward leap of iodine, which we reported last month, has been followed by a slight reaction as we anticipated. Of course it was almost like coining money to buy at 9d., and doubtless many were willing to invest who were not accommodated. The iodine makers like the game of fortune-making too well to hand it over very readily to the operators, and as far as they could help it they let very little of their product go for speculative purposes at the tempting figure we have named. The price is now 1s., and though it is impossible to guess what the next move may be, it is hardly reasonable to anticipate another drop. As far as we can gather, a fair amount of business is being done at this price, but nothing more.

CITRIC ACID occupies a curious position. It is dear enough in all conscience, and we have to report a rise of 3½d. per lb. since last month; but for all that it could not be made at this moment for anything much less than 6s. per lb., if the manufacturer had to go into the market for his lemon juice. We heard of some juice having been sold the other day for £73 the pipe, and manufacturing chemists know what this means. There seems to be an impression, however, that stocks are sufficiently large and sufficiently wide spread to bridge over the time until more favourable means of manufacture are at hand.

The abdication of the gallant King of Spain gave Messrs. Rothschild a plausible excuse for advancing the price of quicksilver to £13, which they announced on the 12th inst. This has caused a rise of about 1d. per lb. on mercurials generally.

Soda, chlorate of potash, oxalic acid, and bleaching powder have all been dealt in largely, and higher prices are the re-

sult all round. Bleaching powder has advanced 2s. per cwt.

At the drug sales on the 6th inst. the buying was of a generally languid character, and "buying in" was the characteristic of the day. A large quantity (208 packages) of Barbadoes aloes was sold at prices varying from £7 down to 55s. None was of the highest quality. 37 baskets of fine Roll Annatto sold at 1s. Balsam Capivi reached 2s. 8d., and will probably go higher. We are informed that the advance in prices and the lowness of the stock here has been wired to America, and there has consequently been a speculative movement in that article on the New York market. The ultimate result there is that the present stock is concentrated in one hand, and is held at 70c. to 75c. gold for parcels, and 85c. currency in a jobbing way. The bulk was bought at about 62c. or 63c. gold.

To return to the London market. Some East India Cinchona barks were put up but bought in, red at 1s. 8d., yellow at 3s. A good quantity of Crown barks was disposed of, the quality varying considerably. Cardamoms were dealt in to some extent, but no change in price was noticeable. Of gums there is nothing new to report. Manna was sold at rather cheaper rates, and a little grain Musk made 64s. A considerable quantity of Castor Oil was on sale, but it was held firmly, East India seconds only going at 5½d. Some Newfoundland and Norwegian Cod Liver Oil were both offered, but held, the former at 6s. 6d., the latter at 5s. 4d. for the best. According to good medical authorities there is no finer oil comes to England than the Norwegian, and the commercial prejudice in favour of Newfoundland would seem to be unfounded. A few cases of opium were taken at previous prices, but the bulk was held. What was sold was of very superior quality, so it may be assumed that the tone of the market was favourable to buyers. A fall in price is reported from the Smyrna market.

The Rhubarb offered was not of that quality which alone is much "wanted," and consequently transactions were limited. A good lot of very fair Tinnivelly Senna was sold at standard prices, but 28 bales of very inferior Bombay were put up "without reserve," and realized ½d. per pound. We should like to follow the future history of that Senna. Bees' Wax from various sources was offered—Jamaica, Australian, Zanzibar, and Mogador. From the prices obtained it would seem that Australian is most in favour, some selling for £9, Jamaica touched £8 15s., Zanzibar stopped at £8, and Mogador went for £6 10s. A large supply of Isinglass was put in the market, and was readily bought.

Among other items we may mention that, on the 4th inst., 456 cases of damaged Turkey Sponge were sold in the market, some as low as 3½d. per pound, one lot reached 3s. 8d., no others exceeding 2s. 0½d.

We hear that the crop of Zanzibar cloves is very small, and consequently advanced prices may be anticipated.

A lively business has been transacted in Shellac, and the price stands now 10s. per cwt. better than a month ago. Some chests of very fine Orange, marked B, S L, S, made £10 on the 4th. The stock, however, is 12,662 chests now as compared to 7,512 this time last year.

OILS are generally remarkably dull. Olive is hardly the medium of any business. Rape is lower. A large quantity has been sold, but the price has gone steadily down. Linseed has fallen slightly, but latest advices report a firmer tone. Some Spermaceti is on the market, but sellers ask £95 per crude, which buyers decline. There has been a brisk demand for Turpentine, and forward sales are now being made at 51s. for American and 50s. for French. Naphtha and Coal Oil are both freely bought at higher rates, the former being now quoted at 1s. 6d. and the latter 1s. 7d. to 1s. 9d. Refined Petroleum on the other hand is dull, and does not maintain previous quotations.



## Monthly Price Current.

The prices quoted in the following list are those actually obtained in Mining-lane for articles sold in bulk. Our Retail Subscribers must not expect to purchase at these market prices, but they may draw from them useful conclusions respecting the prices at which articles are offered by the Wholesale Firms.

## CHEMICALS.

1873.

1872.

ACIDS—	s. d.	s. d.	s. d.	s. d.
Acetic .....	per lb.	0 4½ to 0 0	0 4½ to 0 0	0 0
Citric .....	per lb.	4 9 .. 0 0	3 5 .. 0 0	0 0
Hydrochlor. ....	per cwt	4 0 .. 7 0	4 0 .. 7 0	0 0
Nitric .....	per lb.	0 5 .. 0 5½	0 5 .. 0 5½	0 5½
Oxalic .....	per lb.	0 10 .. 0 10½	1 12 .. 1 2	1 2
Sulphuric .....	per lb.	0 0½ .. 0 1	0 0½ .. 0 1	0 1
Tartaric crystal ..	per lb.	1 7½ .. 1 8	1 8½ .. 0 0	0 0
powdered .....	per lb.	1 3 .. 1 3	1 8½ .. 0 0	0 0
ANTIMONY ore.....	per ton	320 0 .. 500 0	240 0 .. 250 0	250 0
crude .....	per cwt	40 0 .. 42 0	36 0 .. 0 0	0 0
regulus .....	per lb.	0 0 .. 0 0	54 0 .. 0 0	0 0
star .....	per lb.	61 0 .. 64 0	56 0 .. 0 0	0 0
ARSENIC, lump.....	per lb.	13 6 .. 19 0	13 6 .. 14 0	14 0
powder.....	per lb.	9 0 .. 9 3	6 9 .. 7 3	7 3
BRIMSTONE, rough ..	per ton	125 0 .. 147 0	140 0 .. 150 0	150 0
roll .....	per cwt	10 0 .. 0 0	10 0 .. 10 10	10 10
flour.....	per lb.	11 6 .. 12 0	12 0 .. 13 0	13 0
IGDINE, dry .....	per oz.	1 0 .. 0 0	2 3 .. 2 4	2 4
IVORY BLACK, dry... per cwt.	per cwt.	8 6 .. 0 0	8 6 .. 0 0	0 0
MAGNESIA, calcined ..	per lb.	1 6 .. 0 0	1 2 .. 1 3	1 3
MERCURY.....	per bottle	260 0 .. 0 0	260 0 .. 210 0	210 0
MINIUM, red .....	per cwt.	21 3 .. 21 6	21 3 .. 21 6	21 6
orange .....	per lb.	32 6 .. 0 0	31 6 .. 32 0	32 0
PRECIPITATE, red ...	per lb.	4 4 .. 0 0	3 4½ .. 0 0	0 0
white .....	per lb.	4 3 .. 0 0	2 3½ .. 0 0	0 0
PRUSSIAN BLUE .....	per lb.	0 0 .. 0 0	0 0 .. 0 0	0 0
SALTS—				
Alum .....	per ton	170 0 .. 0 0	160 0 .. 165 0	165 0
powder .....	per lb.	190 0 .. 0 0	180 0 .. 0 0	0 0
Ammonia:				
Carbonate .....	per lb.	0 7 .. 0 7½	9 7 .. 0 7½	0 7½
Hydrochlorate, crude,				
white.....	per ton	640 0 .. 0 0	560 0 .. 600 0	600 0
British (see Sal Ammoniac)				
Sulphate .....	per ton	400 0 .. 410 0	460 0 .. 470 0	470 0
Argol, Cape .....	per cwt	80 0 .. 90 0	80 0 .. 90 0	90 0
France .....	per lb.	67 0 .. 70 0	65 0 .. 75 0	75 0
Oporto, red .....	per lb.	32 0 .. 32 6	24 0 .. 28 6	28 6
Sicily .....	per lb.	65 0 .. 70 0	50 0 .. 55 0	55 0
Ashes (see Potash and Soda)				
Bleaching powd. ....	per cwt.	14 9 .. 15 0	14 6 .. 0 0	0 0
Borax, crude .....	per lb.	50 0 .. 76 0	47 0 .. 65 0	65 0
(Tincal) .....	per lb.	47 0 .. 65 0	45 0 .. 60 0	60 0
British refnd. ....	per lb.	105 0 .. 0 0	101 0 .. 0 0	0 0
Calomel .....	per lb.	3 11 .. 0 0	3 2½ .. 0 0	0 0
Copper:				
Sulphate .....	per cwt.	31 0 .. 31 6	29 6 .. 33 0	33 0
Copperas, green .....	per ton	60 0 .. 62 6	60 0 .. 65 0	65 0
Corrosive Sublimate ..	p. lb.	3 4 .. 0 0	2 7½ .. 0 0	0 0
Cr. Tartar, French, p. cwt.	per cwt.	107 6 .. 0 0	107 6 .. 110 0	110 0
Venetian grey .....	per lb.	0 0 .. 0 0	100 0 .. 0 0	0 0
brown .....	per lb.	97 6 .. 102 6	90 0 .. 95 0	95 0
Epsom Salts .....	per cwt.	5 9 .. 6 3	5 6 .. 6 0	6 0
Glauber Salts .....	per lb.	7 6 .. 0 0	4 6 .. 6 0	6 0
Lime:				
Acetate, white, per cwt.	per cwt.	14 0 .. 22 6	13 6 .. 28 0	28 0
Magnesia: Carbonate ..	per lb.	42 6 .. 45 0	42 6 .. 0 0	0 0
Potash:				
Bichromate .....	per lb.	0 8½ .. 0 0	0 10 .. 0 0	0 0
Carbonate:				
Potashes, Canada, 1st				
sort .....	per cwt.	38 0 .. 0 0	45 6 .. 46 0	46 0
Pearlshes, Canada, 1st				
sort .....	per cwt.	50 0 .. 0 0	49 0 .. 49 6	49 6
Chlorate .....	per lb.	1 8 .. 0 0	1 5½ .. 1 6	1 6
Prussiate .....	per lb.	1 5½ .. 1 6	1 9½ .. 0 0	0 0
red .....	per lb.	3 1 .. 0 0	0 .. 3 2	3 2
Tartrate (see Argol and Cream of Tartar)				
Potassium:				
Chloride .....	per cwt.	9 9 .. 10 0	11 0 .. 0 0	0 0
Iodide .....	per lb.	16 0 .. 0 0	35 0 .. 0 0	0 0
Quinine:				
Sulphate, British, in				
bottles .....	per oz.	7 10 .. 0 0	7 9 .. 0 0	0 0
Sulphate, French .....	per lb.	7 9 .. 7 10	7 6 .. 0 0	0 0
Sal Acetate .....	per lb.	1 1½ .. 0 0	1 4 .. 0 0	0 0
Sal Ammoniac, Brit. cwt.	per cwt.	48 0 .. 49 0	47 0 .. 48 0	48 0
Saltpetre:				
Bengal, 6 per cent or				
under .....	per cwt.	29 0 .. 29 6	31 0 .. 31 6	31 6
Bengal, over 6 per cent.				
per cwt.	per cwt.	28 0 .. 28 9	29 0 .. 30 6	30 6
Madras .....	per lb.	0 0 .. 0 0	0 0 .. 0 0	0 0
Bomb. & Kurrachee p. ct.	per lb.	0 0 .. 0 0	0 0 .. 0 0	0 0
European .....	per lb.	0 0 .. 0 0	0 0 .. 0 0	0 0
British, refnd. ....	per lb.	33 6 .. 33 6	34 0 .. 35 0	35 0
Soda: Bicarbonate, p. cwt.	per cwt.	17 8 .. 17 6	14 9 .. 15 0	15 0
Carbonate:				
Soda Ash .....	per dog.	0 9½ .. 0 3½	0 2½ .. 0 0	0 0
Soda Crystals .....	per ton	150 0 .. 0 0	130 0 .. 0 0	0 0
Hyposulphite .....	per cwt.	16 0 .. 16 6	16 0 .. 16 6	16 6
Nitrate .....	per cwt.	16 3 .. 0 0	16 9 .. 17 0	17 0

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SUGAR OF LEAD, White, cwt.	s. d.	s. d.	s. d.	s. d.
Brown .....	per cwt.	45 0 to 0 0	43 0 to 45 0	45 0
SULPHUR (see Brimstone)				
VERDIGRIS .....	per lb.	1 1½ .. 1 2	1 1 .. 1 3	1 3
VERMILION, English ..	per lb.	3 8 .. 3 10	3 4 .. 3 6	3 6
China .....	per lb.	3 7 .. 4 0	3 6 .. 0 0	0 0
DRUGS.				
ALOE, Hepatic .....	per cwt.	80 0 .. 220 0	75 0 .. 230 0	230 0
Socotrine .....	per cwt.	160 0 .. 320 0	180 0 .. 300 0	300 0
Cape, good .....	per lb.	30 0 .. 32 0	42 0 .. 47 0	47 0
Inferior .....	per lb.	20 0 .. 29 0	30 0 .. 40 0	40 0
Barbadoes .....	per lb.	70 0 .. 190 0	75 0 .. 220 0	220 0
AMBERGRIS, grey .....	oz.	26 0 .. 32 6	26 0 .. 29 0	29 0
BALSAM—				
Canada .....	per lb.	1 0 .. 1 10	1 5 .. 1 6	1 6
Capivi .....	per lb.	2 6 .. 2 10	2 0 .. 2 1	2 1
Peru .....	per lb.	9 2 .. 0 0	9 3 .. 9 4	9 4
Tolu .....	per lb.	2 0 .. 0 0	2 0 .. 0 0	0 0
BARKS—				
Canella alba .....	per cwt.	15 0 .. 25 0	15 0 .. 25 0	25 0
Cascarilla .....	per lb.	23 0 .. 37 0	22 0 .. 37 0	37 0
Peru, crown & grey ..	per lb.	1 0 .. 2 8	1 6 .. 3 1	3 1
Calisaya, flat .....	per lb.	2 10 .. 4 3	3 2 .. 3 4	3 4
quill .....	per lb.	2 10 .. 4 10	3 2 .. 3 4	3 4
Carthage .....	per lb.	0 10 .. 1 9	0 10 .. 1 9	1 9
Pitayo .....	per lb.	0 4 .. 1 9	0 10 .. 1 9	1 9
Red .....	per lb.	1 10 .. 6 0	1 10 .. 6 0	6 0
Bucha Leaves .....	per lb.	0 2 .. 1 0	0 4 .. 1 0	1 0
CAMPOR, China .....	per cwt.	84 0 .. 0 0	82 6 .. 0 0	0 0
Japan .....	per lb.	85 0 .. 0 0	85 0 .. 0 0	0 0
Refin Eng. per lb.	per lb.	1 2½ .. 0 0	1 4 .. 0 0	0 0
CANTHARIDES .....	per lb.	5 9 .. 6 6	7 6 .. 7 9	7 9
CHAMOMILE FLOWERS p. cwt.	per cwt.	40 0 .. 80 0	45 0 .. 70 0	70 0
CASTOREUM .....	per lb.	6 0 .. 20 0	3 0 .. 30 0	30 0
DRAGON'S BLOOD, lp. p. cwt.	per cwt.	100 0 .. 240 0	110 0 .. 210 0	210 0
FRUITS AND SEEDS (see also Seeds and Spices)				
Anise, China Star .....	per cwt.	117 6 .. 125 0	135 0 .. 140 0	140 0
Spanish, &c. ....	per lb.	18 0 .. 38 0	35 0 .. 50 0	50 0
Beans, Tonquin .....	per lb.	2 0 .. 2 6	1 0 .. 1 8	1 8
Cardamoms, Malabar				
good .....	per lb.	4 2 .. 5 9	8 8 .. 8 10	8 10
inferior .....	per lb.	2 6 .. 3 9	7 8 .. 8 0	8 0
Madras .....	per lb.	2 0 .. 4 6	2 6 .. 7 6	7 6
Ceylon .....	per lb.	4 10 .. 5 2	3 0 .. 3 2	3 2
Cassia Fistula .....	per cwt.	12 0 .. 22 0	12 0 .. 30 0	30 0
Castor Seeds .....	per lb.	5 0 .. 10 0	10 0 .. 12 0	12 0
Cocculus Indicus .....	per lb.	12 0 .. 14 0	19 0 .. 0 0	0 0
Colocynth, apple .....	per lb.	0 3 .. 0 6	0 3 .. 0 6	0 6
Crotou Seeds .....	per cwt.	55 0 .. 0 0	65 0 .. 70 0	70 0
Cubebs .....	per lb.	23 0 .. 0 0	25 0 .. 27 0	27 0
Cummin .....	per lb.	20 0 .. 26 0	55 0 .. 67 0	67 0
Dividivi .....	per lb.	11 0 .. 16 0	12 0 .. 15 0	15 0
Fenugreek .....	per lb.	0 9 .. 0 10	10 11 .. 1 1	1 1
Guinea Grains .....	per lb.	24 0 .. 25 0	50 0 .. 57 6	57 6
Juniper Berries .....	per lb.	10 0 .. 10 6	11 6 .. 12 6	12 6
Myrobalans .....	per lb.	9 0 .. 14 0	12 0 .. 17 6	17 6
Nux Vomica .....	per lb.	10 0 .. 15 0	10 9 .. 18 6	18 6
Tamarinds, East India ..	per lb.	5 0 .. 20 0	2 0 .. 14 0	14 0
West India, new .....	per lb.	20 0 .. 31 0	12 3 .. 30 0	30 0
Vanilla, large .....	per lb.	52 0 .. 65 0	40 0 .. 51 0	51 0
inferior .....	per lb.	25 0 .. 49 0	20 0 .. 37 0	37 0
Wormseed .....	per cwt.	0 0 .. 0 0	0 0 .. 0 0	0 0
GINGER, Preserved, in bond				
(duty 1d. per lb.) per lb.	per lb.	0 6 .. 0 9	0 6½ .. 0 11	0 11
GUMS (see separate list)				
HONEY, Chili .....	per cwt.	30 0 .. 41 0	50 0 .. 60 0	60 0
Cuba .....	per lb.	0 0 .. 0 0	35 0 .. 50 0	50 0
Jamaica .....	per lb.	30 0 .. 45 0	50 0 .. 66 0	66 0
Australian .....	per lb.	20 0 .. 40 6	0 0 .. 0 0	0 0
IPECACUANHA .....	per lb.	3 4 .. 8 7	4 7 .. 4 9	4 9
ISINGLASS, Brazil .....	per lb.	2 6 .. 4 6	2 6 .. 4 4	4 4
Tongue sort .....	per lb.	3 4 .. 5 2	3 8 .. 5 1	5 1
East India .....	per lb.	1 0 .. 4 5	1 5 .. 3 10	3 10
West India .....	per lb.	4 0 .. 4 5	3 10 .. 4 1	4 1
Russ, long staple .....	per lb.	8 0 .. 12 6	6 0 .. 9 6	9 6
leaf .....	per lb.	3 6 .. 7 6	3 6 .. 6 6	6 6
Simovia .....	per lb.	2 6 .. 4 6	2 0 .. 3 6	3 6
JALAP, good .....	per lb.	1 4 .. 2 0	1 6 .. 2 6	2 6
infer. & stems .....	per lb.	0 10 .. 1 3	0 6 .. 1 5½	1 5½
LEMON JUICE .....	per degree	0 2½ .. 0 0	0 1 .. 0 1	0 1
LIQUORICE, Spanish per cwt.	per cwt.	0 0 .. 0 0	35 0 .. 37 0	37 0
Italian .....	per lb.	0 0 .. 0 0	40 0 .. 60 0	60 0
MANNA, flaky .....	per lb.	3 0 .. 3 3	3 3 .. 3 6	3 6
small .....	per lb.	1 2 .. 1 8	2 0 .. 0 0	0 0
MUSK, Pod .....	per oz.	19 0 .. 39 0	20 0 .. 43 0	43 0
Grain .....	per lb.	50 0 .. 64 0	0 0 .. 0 0	0 0
OILS (see also separate List)				
Almond, expressed per lb.	per lb.	1 0 .. 0 0	1 3 .. 0 0	0 0
Castor, 1st pale .....	per lb.	0 5½ .. 0 0	0 5½ .. 0 5½	0 5½
second .....	per lb.	0 5½ .. 0 0	0 5 .. 0 4½	0 4½
infer. & dark .....	per lb.	0 4½ .. 0 0	0 4½ .. 0 4½	0 4½
Bombay (in casks) .....	per lb.	0 4½ .. 0 0	0 4½ .. 0 4½	0 4½
Cod Liver .....	per gall.	3 6 .. 5 6	5 0 .. 6 0	6 0
Croton .....	per oz.	0 3 .. 0 4	0 3½ .. 0 4½	0 4½
Essential Oils:				
Almond .....	per lb.	30 0 .. 0 0	35 0 .. 0 0	0 0
Anise-seed .....	per lb.	9 0 .. 0 0	11 6 .. 12 3	12 3
Bay .....	per cwt.	0 0 .. 0 0	65 0 .. 70 0	70 0
Bergamot .....	per lb.	3 6 .. 16 0	8 0 .. 15 0	15 0
Cajeput, (in bond) per oz.	per oz.	0 0 .. 0 0	0 1½ .. 0 0	0 0
Caraway .....	per lb.	5 6 .. 6 3	5 6 .. 6 3	6 3
Cassia .....	per lb.	6 10 .. 0 0	5 6 .. 5 8	5 8
Cinnamon .....	per oz.	1 0 .. 2 0	0 10 .. 3 0	3 0
Cinnamon-leaf .....	per lb.	0 3 .. 0 3½	0 2 .. 0 4½	0 4½



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Essential Oils, continued:—				s. d.	s. d.	s. d.	s. d.	Oils, continued:—				£ s.	£ s.	£ s.	£ s.
Cltronelle .....	per oz.	0 2½	to 0 0	0 3½	to 0 0	0 2 9	to 0 0	COD .....	per tun	38 0	to 0 0	34 0	to 0 0	37 0	to 0 0
Clove .....	per lb.	4 0	.. 0 0	2 9	.. 0 0	2 9	.. 0 0	WHALE, South Sea, pale ..	..	40 0	.. 0 0	37 0	.. 0 0	34 0	.. 0 0
Juniper .....	..	1 9	.. 2 0	1 3	.. 2 4	1 3	.. 2 4	brown ..	..	38 0	.. 38 0	34 0	.. 36 0	32 0	.. 0 0
Lavender .....	..	2 6	.. 5 6	3 6	.. 6 0	3 6	.. 6 0	East India, Fish ..	..	24 0	.. 0 0	28 0	.. 0 0	25 0	.. 0 0
Lemon .....	..	6 0	.. 15 0	5 0	.. 15 0	5 0	.. 15 0	OLIVE, Galipoli .... per ton	..	46 0	.. 0 0	53 0	.. 0 0	52 0	.. 0 0
Lemongrass .....	per oz.	0 3½	.. 0 0	0 4½	.. 0 0	0 4½	.. 0 0	Trieste .....	..	44 10	.. 45 0	50 0	.. 0 0	49 0	.. 0 0
Neroli .....	..	7 0	.. 8 0	7 0	.. 8 6	7 0	.. 8 6	Levant .....	..	42 0	.. 42 10	50 0	.. 0 0	49 0	.. 0 0
Nutmog .....	..	0 7½	.. 0 9	0 4½	.. 0 10	0 4½	.. 0 10	Mogador .....	..	42 0	.. 42 10	51 0	.. 0 0	51 0	.. 51 10
Orange .....	per lb.	7 0	.. 8 0	7 0	.. 8 0	7 0	.. 8 0	Spanish .....	..	42 10	.. 43 10	51 0	.. 0 0	51 0	.. 0 0
Otto of Roses .....	per oz.	15 0	.. 28 0	12 0	.. 21 0	12 0	.. 21 0	Sicily .....	..	43 0	.. 0 0	44 10	.. 0 0	44 10	.. 0 0
Patchouli .....	..	4 0	.. 0 8	4 0	.. 0 0	4 0	.. 0 0	COCOANUT, Ceylon ..	..	86 0	.. 39 0	38 0	.. 0 0	38 0	.. 0 0
Peppermint:	..	..	..	..	..	..	..	Ceylon ..	..	34 0	.. 34 10	32 0	.. 38 0	32 0	.. 38 0
American .....	per lb.	12 0	.. 0 0	13 6	.. 14 6	13 6	.. 14 6	Sydney ..	..	29 0	.. 34 10	0 0	.. 0 0	0 0	.. 0 0
English .....	..	26 0	.. 28 0	80 0	.. 83 0	80 0	.. 83 0	GROUND NUT AND GINGELLY:	..	0 0	.. 0 0	42 0	.. 0 0	42 0	.. 0 0
Rosemary .....	..	1 11	.. 0 0	1 9	.. 2 0	1 9	.. 2 0	Bombay .....	..	35 10	.. 0 0	39 0	.. 39 10	39 0	.. 39 10
Sassafras .....	..	3 2	.. 3 8	3 0	.. 3 6	3 0	.. 3 6	Madras .....	..	37 15	.. 38 0	33 0	.. 33 5	33 0	.. 33 5
Spearment .....	..	4 0	.. 16 0	4 0	.. 16 0	4 0	.. 16 0	PALM, fino .....	..	32/17/8	.. 33 0	44 0	.. 44 0	44 0	.. 44 0
Thyme .....	..	1 10	.. 1 11	1 10	.. 2 0	1 10	.. 2 0	LINSEED .....	..	40 0	.. 0 0	42 0	.. 42 0	42 0	.. 42 0
Mace, expressed ..	per oz.	0 1½	.. 0 4	0 1½	.. 0 3	0 1½	.. 0 3	RAPESEED, English, pale ..	..	37 10	.. 33 0	45 0	.. 45 0	45 0	.. 45 0
OPU, Turkey .....	per lb.	24 0	.. 27 0	17 0	.. 19 0	17 0	.. 19 0	brown ..	..	40 0	.. 42 0	45 0	.. 45 0	45 0	.. 45 0
inferior .....	..	12 0	.. 20 0	11 0	.. 16 0	11 0	.. 16 0	Foreign pale ..	..	40 0	.. 42 0	0 0	.. 0 0	0 0	.. 0 0
QUASSIA (bitter wood) per ton	..	85 0	.. 90 0	80 0	.. 82 6	80 0	.. 82 6	brown ..	..	89 0	.. 0 0	33 10	.. 33 10	33 10	.. 33 10
RUHARB, China, good and	..	2 9	.. 6 0	2 3	.. 6 0	2 3	.. 6 0	COTTONSEED .....	..	30 0	.. 0 0	50 0	.. 53 0	50 0	.. 53 0
fine .....	per lb.	0 8	.. 2 6	0 5	.. 2 0	0 5	.. 2 0	LARD .....	..	44 10	.. 45 10	35 0	.. 35 0	35 0	.. 35 0
Good, mid. to ord. ..	..	9 0	.. 9 6	0 0	.. 0 0	0 0	.. 0 0	TALLOW .....	..	32 0	.. 0 0	54 0	.. 54 0	54 0	.. 54 0
Dutch trimmed ..	..	0 0	.. 0 0	0 0	.. 0 0	0 0	.. 0 0	TURPENTINE, American, cks.	..	51 0	.. 0 0	0 0	.. 0 0	0 0	.. 0 0
Russian .....	..	24 0	.. 32 6	24 0	.. 30 0	24 0	.. 30 0	PETROLEUM, Crude .....	..	0 0	.. 0 0	0 0	.. 0 0	0 0	.. 0 0
ROOTS—Calumba .....	per cwt.	20 0	.. 27 0	24 0	.. 28 0	24 0	.. 28 0	s. d.	..	1 7	.. 7½	1 6	.. 1 6½	1 6	.. 1 6½
China .....	..	18 0	.. 22 0	17 0	.. 18 0	17 0	.. 18 0	refined, per gall.	..	1 5	.. 1 6	0 11	.. 0 0	0 11	.. 0 0
Galangal .....	..	18 0	.. 19 0	19 6	.. 0 0	19 6	.. 0 0	SEEDS.	..	48 0	.. 56 0	52 0	.. 58 0	52 0	.. 58 0
Gentian .....	..	30 0	.. 32 0	30 0	.. 35 0	30 0	.. 35 0	CANARY .....	per qr.	36 0	.. 44 0	40 0	.. 44 0	40 0	.. 44 0
Hellebore .....	..	30 0	.. 36 0	65 0	.. 75 0	65 0	.. 75 0	CARAWAY, English per cwt.	..	29 0	.. 36 0	32 6	.. 35 0	32 6	.. 35 0
Orris .....	..	38 0	.. 39 0	60 0	.. 63 0	60 0	.. 63 0	German, &c. ....	..	16 0	.. 13 0	40 0	.. 44 0	40 0	.. 44 0
Pellitory .....	..	0 10	.. 1 0	0 9	.. 1 3	0 9	.. 1 3	CORIANDE .....	per qr.	40 0	.. 44 0	40 0	.. 44 0	40 0	.. 44 0
Rhatany .....	..	0 5	.. 0 11	0 4	.. 0 11	0 4	.. 0 11	HEMP .....	..	60 0	.. 61 6	60 0	.. 61 0	60 0	.. 61 0
Senoka .....	..	4 3	.. 4 6	5 0	.. 5 2	5 0	.. 5 2	LINSEED, English per qr.	..	60 6	.. 0 0	63 3	.. 63 6	63 3	.. 63 6
Snake .....	..	1 1	.. 1 2	1 5	.. 1 6	1 5	.. 1 6	Black Sea & Azof ..	..	65 0	.. 0 6	58 0	.. 58 0	58 0	.. 58 0
SAFFRON, Spanish ..	..	26 0	.. 0 0	3 5	.. 44 0	3 5	.. 44 0	Calcutta ..	..	0 0	.. 0 0	60 0	.. 60 0	60 0	.. 60 0
SALEP .....	per cwt.	170 0	.. 180 0	0 8	.. 0 11	0 8	.. 0 11	Bombay ..	..	60 0	.. 0 0	60 0	.. 60 0	60 0	.. 60 0
SARSAPARILLA, Lima per lb.	..	0 5½	.. 0 7	1 0	.. 1 3	1 0	.. 1 3	St. Petersburg ..	..	13 0	.. 16 0	8 0	.. 9 6	8 0	.. 9 6
Para .....	..	1 3	.. 0 0	1 0	.. 1 3	1 0	.. 1 3	white ..	..	70 6	.. 71 0	64 0	.. 65 0	64 0	.. 65 0
Honduras .....	..	1 2	.. 1 8	1 2	.. 1 8	1 2	.. 1 8	SPICES.	..	25 0	.. 60 0	42 0	.. 92 0	42 0	.. 92 0
Jamaica .....	..	1 6	.. 2 6	1 7	.. 2 11	1 7	.. 2 11	CASSIA LIGNEA .... per cwt.	..	117 6	.. 122 6	130 0	.. 140 0	130 0	.. 140 0
SASSAFRAS .....	per cwt.	0 0	.. 0 0	0 0	.. 0 0	0 0	.. 0 0	Vera .....	..	0 0	.. 0 0	0 0	.. 0 0	0 0	.. 0 0
SOAMONY, Virgin ..	per lb.	26 0	.. 30 0	10 0	.. 25 0	10 0	.. 25 0	Buds .....	..	2 6	.. 3 11	2 7	.. 3 8	2 7	.. 3 8
second & ordinary ..	..	14 0	.. 25 0	0 3	.. 0 5	0 3	.. 0 5	CINNAMON, Ceylon,	..	2 0	.. 3 6	1 11	.. 3 5	1 11	.. 3 5
SENNA, Bombay ..	..	0 2	.. 0 5	0 3	.. 0 5	0 3	.. 0 5	1st quality .....	per lb.	2 0	.. 3 6	1 9	.. 2 11	1 9	.. 2 11
Tinnivelly .....	..	0 2	.. 0 11	0 2½	.. 1 4	0 2½	.. 1 4	2nd do. ....	..	1 8	.. 3 3	2 7	.. 3 2	2 7	.. 3 2
Alexandria .....	..	0 2½	.. 1 0	0 3½	.. 1 7	0 3½	.. 1 7	3rd do. ....	..	2 9	.. 3 2	1 3	.. 1 4	1 3	.. 1 4
SFERMACETI, refined ..	..	1 6	.. 0 0	1 6	.. 1 7	1 6	.. 1 7	Tellicherry .....	..	0 6½	.. 0 11	0 4½	.. 0 10½	0 4½	.. 0 10½
American .....	..	1 2	.. 1 3½	1 3	.. 1 4	1 3	.. 1 4	CLOVES, Penang .....	..	1 4	.. 1 5	0 4	.. 0 4½	0 4	.. 0 4½
SQUILLS .....	..	0 1½	.. 0 2½	0 1½	.. 0 2	0 1½	.. 0 2	Amboyna .....	..	0 6½	.. 0 11	0 4	.. 0 4½	0 4	.. 0 4½
GUMS.	..	100 0	.. 160 0	90 0	.. 165 0	90 0	.. 165 0	Zanzibar .....	..	100 0	.. 200 0	90 0	.. 180 0	90 0	.. 180 0
AMMONIAC drop ..	per cwt.	80 0	.. 130 0	55 0	.. 30 0	55 0	.. 30 0	GINOER, Jam., fine per cwt.	..	52 0	.. 90 0	47 0	.. 37 0	47 0	.. 37 0
lump ..	..	280 0	.. 330 0	300 0	.. 355 0	300 0	.. 355 0	Ord. to good ..	..	44 0	.. 45 0	32 0	.. 30 0	32 0	.. 30 0
ANIMI, fine washed	..	220 0	.. 280 0	230 0	.. 290 0	230 0	.. 290 0	African .....	..	41 0	.. 0 0	35 0	.. 30 0	35 0	.. 30 0
boldscraped ..	..	140 0	.. 230 0	160 0	.. 260 0	160 0	.. 260 0	Bengal .....	..	42 6	.. 0 0	38 0	.. 30 0	38 0	.. 30 0
sorts .....	..	90 0	.. 130 0	100 0	.. 150 0	100 0	.. 150 0	Malabar .....	..	52 0	.. 125 0	50 0	.. 110 0	50 0	.. 110 0
dark ..	..	65 0	.. 77 6	71 0	.. 76 6	71 0	.. 76 6	Cochin .....	..	0 6½	.. 0 7	0 6½	.. 0 7	0 6½	.. 0 7
ARABIC, E. I., fine	..	60 0	.. 69 0	60 0	.. 70 0	60 0	.. 70 0	PEPPER, Blk, Malabar, per lb.	..	0 6½	.. 0 0	0 6½	.. 0 0	0 6½	.. 0 0
pale picked ..	..	23 0	.. 50 0	23 0	.. 42 0	23 0	.. 42 0	Singapore ..	..	3 6	.. 4 1	4 2	.. 4 7	4 2	.. 4 7
srts, gd. to fin ..	..	160 0	.. 230 0	160 0	.. 200 0	160 0	.. 200 0	White, Tellicherry ..	..	3 2	.. 3 5	3 8	.. 4 1	3 8	.. 4 1
garblings ..	..	85 0	.. 150 0	85 0	.. 150 0	85 0	.. 150 0	Cayenne .....	..	2 10	.. 3 2	3 4	.. 3 5	3 4	.. 3 5
TURKEY, pick. gd to fin.	..	0 0	.. 0 0	65 0	.. 80 0	65 0	.. 80 0	132 to 95 ..	..	2 4	.. 2 9	3 0	.. 3 4	</	







